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Children of the Midnight Sun

By JOSEPH DIXON, Berkeley, Cal.
With photographs by the author

AMONG the many species of birds that migrate through the United States, there are perhaps fewer species of shore-birds (*Limicolæ*) that remain to breed within its borders than there are of any other group of migrating birds. Many of these waders are not content to spend their summers even in the northern Canadian provinces, but push on until they reach the very shores of the Polar Sea, where they rear their young during the two months of continuous daylight.

Herbert K. Job, in 'Wild Wings,' has called attention to the notable fact that, in spite of all the hunting of the day, there were comparatively very few shore-bird pictures. However, photographs of the domestic life of certain species are not so hard to obtain in the far North, provided one has patience and plates which will not 'sweat' from repeated freezing and thawing. In order to be on hand during the breeding-season, one must spend the previous winter in the north, for by the time navigation opens, the young Shore-birds are running about nearly grown.

The Harvard Alaska-Siberia Expedition of 1913–1914, of which, as the representative of John E. Thayer, I was a member, on account of unfavorable ice conditions spent almost an entire year more than was intended on the Arctic coast of Alaska, two-thirds of the way from Point Barrow to the mouth of the Mackenzie River. To some of us this chance to spend a season on the nesting-grounds of so many rare birds was solace enough for enduring the previous six months of extreme cold and darkness. Among the great and small, no birds were more interesting than the wee Semipalmated Sandpiper (*Ereunetes pusillus*).

On May 24, when the brown moss began to peep through the snow in spots, a little Semipalmated Sandpiper with toes cold and numb waded hurriedly along the edge of an ice-filled tundra pool. Here tiny brown larvæ were being washed out by a rapidly increasing stream that trickled down from the lower edge of the

ice. It was much warmer on the bare patches of moss, and the little Sandpiper, having come many miles over snow-covered mountains during the night, felt the cold keenly, yet there was an empty stomach which simply couldn't wait a moment longer with all those fat helpless bugs-to-be drifting along in

WINTER CAMP IN THE LAND OF NINE-MONTH WINTERS
Photograph taken by moonlight

the icy water that gurgled under snow bridges down to the near by ice-covered lagoon.

His appetite partly satisfied, the Sandpiper trotted up on a frozen tussock to see if could spy his mate, for he had not gone on ahead of her on their long Arctic pilgrimage as the males of so many birds do. He found her busily investigating a raft of dead grass stems that had gathered in an eddy. With a sudden flirt of his wings he arose and skimmed quickly over to her. She gave a hearty squeak of welcome as he lit, then turned and proceeded with her breakfast. The fare proved scanty, however, and he soon led her back to his own table.

The male Sandpiper now arose on a short flight of observation. To the east and west a wide treeless plain sloped gently down from the snow-covered Alaskan peaks to the southward. In places this endless field of white was broken by the greenish blue of frozen ponds, while farther off a long black line marked the edge of an ice-covered lagoon. Rough, broken ice-fields stretched away to the north, covering the playground of the seal and polar bear. One short flight was enough to assure the birds that they had reached the edge of the Polar Sea and their home for the summer.

The Sandpipers fed heartily all day on the bountiful food-supply and did not worry about a place to sleep. In fact, it was now May 25, and they seemed to know that for almost two months the sun would not set. At midnight it did

almost touch the still frozen Arctic Ocean to the north, and from 10 in the evening until 3 in the morning, new ice often formed on the smaller pools. During this interval the Sandpipers often huddled together for warmth. However, depending largely on exercise to keep themselves warm, they were out foraging for breakfast by 3 o'clock the next morning.

The frigid, smoky layers of mist that had extended over the tundra from the ice-pack during the night evaporated suddenly, ushering in for the birds a day of twenty-four golden hours. Mr. Sandpiper soon found that it was not going to be all sunshine for him. He had taken only a few short wavy nuptial flights into the crisp air when he observed some bold stranger making love to his mate. He immediately fluffed out his feathers so as to appear as large as possible and proceeded to upset the brazen intruder. Nothing was visible for a moment but two whirling bits of gray and white, but the stranger, evidently surprised by the suddenness and vigor of the attack, sought safety in flight. All that could be seen was an apparently double bird twisting away along a dark broken bank, so closely was the pursuit followed up. Mr. Sandpiper was so puffed up by his victory that he didn't even wait for his next rival to begin operations but gave him a thorough trouncing as soon as he lit on their homestead.

For their homestead it was to be. Mrs. Sandpiper ceased her coquettish ways and no longer bobbed her head to attract the attention of passing males. One morning she was found industriously scratching a shallow hole in the short thick grass on the warm south side of a well-drained hummock, surrounded by connected pools. The next day the cavity was lined with dead willow leaves and contained a beautiful, heavily blotched egg. Each day brought forth an additional egg until there were four. Being remarkably large for so small a bird, they completely filled the nest. In order to economize space, the eggs were kept with the sharp pointed ends facing the center of the nest.

FOUR BEAUTIFUL, HEAVILY BLOTCHED EGGS COMPLETELY FILLED THE NEST

Mr. Sandpiper was now busy making short song-flights at an elevation of about 50 feet above and near the nest. His song seemed to come from every direction, and this illusion was difficult to account for even by the unusual location of the songster. To human ears it sounded like the mellow trill of a katydid, but to Mrs. Sandpiper he was probably an avian Caruso. These artistic endeavors were often interrupted by the appearance of some, perhaps innocent, intruding Sandpiper, always a cause for combat, when the tenor love-notes gave way to baritone war-cries.

THE FEMALE ON THE NEST ALWAYS FACED THE CAMERA

As overbearing as the pugnacious male Sandpiper was to all strangers, he was always a very considerate and willing helper to his brooding mate. During the cooler morning hours, from 2 until 4 o'clock, he often relieved her of the household duties and kept the eggs warm while she was away getting her breakfast along the edge of a lagoon some 200 yards distant. He was always very shy, and if visited by the human chronicler of his home-life would trot anxiously about, not returning to the nest as long as the intruder remained in the neighborhood. About noontide, on bright cloudless days, the eggs were often left to take care of themselves for a couple of hours while the parents fed slowly along the edge of some freshwater pond or basked in the sun. The eggs blended so well with the general brown tone of the tundra that they were indis-

SHE TURNED THE EGGS OVER WITH HER BILL

tinguishable from it at a distance of 10 feet, so there was little danger of the nest being robbed.

The mother bird was very uneasy when frightened from the eggs. With spread tail and tremulous wings, she fluttered away uttering agonized squeaks until she was about 50 yards distant. Then she would assume a true Sandpiper attitude and cautiously return. If the observer was partly concealed in some depression, she would return directly to her treasures, but she always turned the eggs over with her bill, apparently to see if they were harmed in any way. She then fluffed out her breast feathers and tucked the eggs under her.

In June, seventeen days after the four fresh eggs were found, a visit to the nest revealed no eggs and but one newly hatched Sandpiper. He must have just escaped from the shell, as his soft speckled down was still wet and bedraggled. The other chicks could not be found until the observer hid, when the

YOUNG SANDPIPER USING ITS WINGS AS CRUTCHES

mother hastened over and hovered them as they nestled together in a little hollow not over 5 feet from the nest. Thus, the Sandpipers left the nest the very morning that they were hatched.

The young Sandpipers' coats consisted of alternate spots of brown and buffish natal down which blended so remarkably with the general brown tone of the tundra as to render the young birds practically invisible as long as they remained motionless. If their exact location was known, they could sometimes be distinguished from their surroundings at a distance of 8 feet; but if their position was not known, they were frequently invisible when only 3 feet distant. The birdman was often compelled to discontinue his search for them because of the danger of stepping on them before they could be seen.

The gait of the young Sandpipers was a stumbling toddle, while their large feet and legs were all out of proportion to the rest of their slender bodies. By drooping and extending their wings they were able to use them as crutches which often kept them from falling. In spite of this extra pair of legs they

occasionally took headlong tumbles when tripped up by grass-blades. Their note was a low, rusty squeak which often escaped human ears altogether, although the actions of the mother showed that she heard it. Faint as this whispered note was, it seemed to be the means of the family keeping track of each other.

YOUNG TOO LARGE TO BE BROODED, PROTECTED BY MOTHER FROM CHILL WIND

Father Sandpiper ceased his song-flights now and helped keep the young warm. It was a cause of much surprise when it was found that the parents made no effort to feed the young. It was soon seen, however, that such care was not necessary. The young would stumble about and pick up minute gnats and flies with great dexterity, and the shallow algæ-rimmed pools furnished them many a juicy 'wriggler.' One thing was evidently considered very important by the parents during the colder hours of the day: The young must be thoroughly warmed by hovering at intervals not exceeding five minutes.

It snowed the night of July 3, and the fourth was cold and gusty with a chill wind off the ice which was still 4 feet thick around our ship. The youngest Sandpiper was missing that morning and was probably frozen in the snow, although the parents seemed to take equal care of all their children.

Soon after this the largest youngster became very headstrong, insisting upon running about as long as it pleased without being brooded. His father's patience was worn out at last, so he reached over and pecked his wayward offspring on the top of the head until it was glad to stick its head down in the grass to escape the blows. Then the father brooded it with unusual care and solicitude.

FEMALE SANDPIPER AND HER FOUR YOUNG

A hungry Arctic fox prowled around the home of the Sandpipers the morning of July 5, but the circle of tundra ponds which surrounded the nesting-site proved an effective barrier. Following the marauder's tracks along the beach, we came to where he had eaten a family of young Snow-Buntings that he had dug out of their nest deep in a crack in a 'cut' bank.

Another menace hung over the Sandpiper family in the shape of 'Ook-pick,' the large Snowy Owl. If 'Ook-pick' had waited in orthodox Owl fashion until night-time to hunt for his supper, he would have had to wait for over a month for night to fall, so, being a sensible bird, he did his hunting mornings and evenings. Thus, as he sat one morning on his favorite perch, a log that stuck up out of a snowdrift, he saw what he took to be a brown lemming mouse scamper-

MALE SANDPIPER (IN BACKGROUND) BROODING A CHICK. ANOTHER CHICK TO THE RIGHT AND BELOW CENTER IS AN EXCELLENT EXAMPLE OF PROTECTIVE COLORATION.

ing about near Mrs. Sandpiper. He slid from his perch and sailed on silent wings to the spot, but Mrs. Sandpiper had caught a glimpse of him and gave a quick cry of alarm to her children. Not a feather quivered as the youngsters hastily flattened in the grass. Mr. Owl poised directly over them, blinked his large yellow eyes, and doubtless wondered how that lemming mouse disappeared so suddenly. The little Sandpipers remained perfectly still until their mother called them after the danger was past.

By July 8 the young were leading the parents about. They were now too large to be brooded. During one bright, cold day when there was a freezing wind from off the ice, the mother protected one juvenal from the chill wind by crouching on the windward side of him, thus forming a windbreak. By this time the juvenal's wing-quills were half-grown, and the young birds stood well above the short grass where they fed.

A pair of swift-winged Parasitic Jaegers, the worst feathered villains in the Northland, had often cast mercenary glances at the Sandpiper family. The daily occupation of these Jaegers during the nesting-season was the spying out

and devouring of all eggs and nestlings that they could find. The second catastrophe in the Sandpiper household was due to the cunning of these cradle-snatching rascals. One morning the light-colored Jaeger made a rush for a juvenile Sandpiper, but the mother gave the alarm in time for the young to flatten their bodies, stretch their necks forward and remain motionless, thereby so resembling the brown-and-black spotted clumps of moss as to be practically invisible. The oldest youngster, always impatient, did not wait for his mother's note of assurance of the danger being past, but started up as soon as he saw the Jaeger fly on down the lagoon. He seemed to have forgotten all about the other Jaeger which had slipped up behind them in the excitement and now darted in and carried off the shrieking youngster. From that time on the 'Birdman' adopted the Eskimo custom of shooting at every Jaeger that came within range.

By July 26, the young were almost as large as their parents and practically full-fledged, although occasional bits of natal down still clung to them in places. By this time several families had joined together and soon there were large flocks that swooped and circled about high in the air in preparation for their long journey South. There was no visible reason for their early departure, for there seemed still to be an abundant supply of food; certainly much more than there was when the first birds arrived in the spring. However, on August 2, large flocks were seen circling high overhead and leaving for the South. In a few more days the wee Sandpipers were all gone and the shallow tundra pools lay forsaken and tenantless in the waning Arctic sunlight.

UNFAVORABLE ICE CONDITIONS IN THE ARCTIC OCEAN, JULY 25, 1914

The Giant Bird Diatryma

By WALTER GRANGER, American Museum of Natural History

A REMARKABLE new bird has been added recently to the ancient avifauna of North America*. This bird lived in the Rocky Mountain region during Eocene time, some 3,000,000 years ago, and was a contemporary of the little four-toed horse *Eohippus*. It is distinguished as being the largest bird, so far as known, which has ever lived north of the Isthmus of Panama, being excelled in size, in the Western Hemisphere, only by the great *Phororhachos* of the more recent Miocene deposits of Patagonia.

Fossil remains of birds are rare as compared with those of fish, reptiles, and mammals, and consequently our knowledge of the past history, or evolution, of the various groups of birds is meager. The reason for the scarcity of bird fossils is partly because of the extremely delicate character of the bones, which are usually the only parts of a vertebrate animal to be preserved; also because the habits of birds are such as to prevent them from becoming entombed in the sands and muds and thereby becoming fossils of a later time; a third reason is that the bodies of dead birds are apt to be devoured by animals, insects, or by other birds.

The oldest and most important fossil bird known is the *Archæopteryx* from the Jurassic limestones of Bavaria, represented by two specimens which show not only the bones but the impressions of the larger feathers. From the Pleistocene of New Zealand come the great flightless Moas, the tallest birds known, and from Patagonia the *Phororhachos*, also without power of flight. Our own country has made a notable contribution to ancient ornithology in its toothed birds—*Hesperornis* and *Ichthyornis*—from the Cretaceous chalks of western Kansas. Scattered and fragmentary remains of other and more modern birds from time to time have been collected in our western fossil fields; often the specimens consisted of a single wing- or leg-bone or a part of a foot, almost never was there enough of the skeleton to determine the exact relationship to modern birds. It was a matter of unusual interest then when a nearly complete and well-preserved skeleton of the gigantic *Diatryma* was discovered last summer.

The presence of a great bird in North America in Eocene times was known as far back as 1876 when Professor Cope of Philadelphia published an account of some fragments of a foot which he had found in northern New Mexico two years before and to which he gave the name *Diatryma gigantea*. Nearly twenty years later Professor Marsh of Yale described a single toe-bone of a gigantic bird from the Eocene parts of southern New Jersey. He named this *Barornis* but the bone cannot be distinguished from the corresponding bone of Cope's genus. Nothing more was known of this bird until 1911 when the writer found in the Bighorn Basin, Wyo., in rocks of the same age as those in New Mexico,

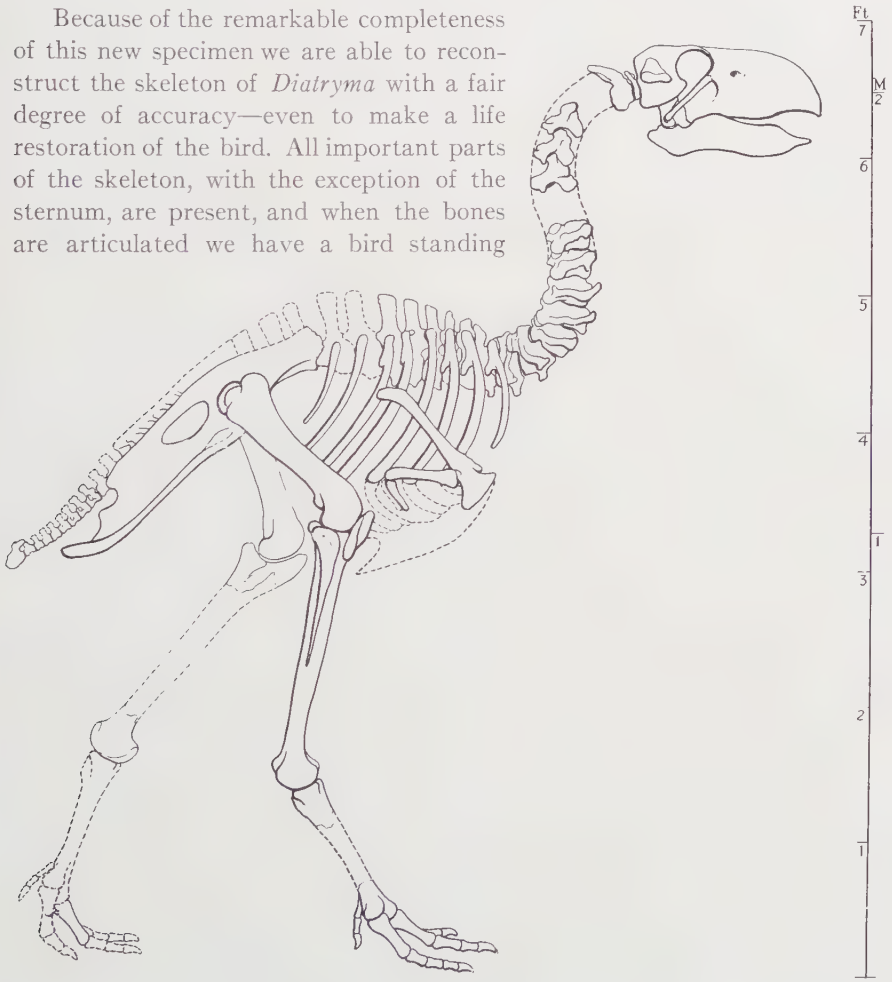
*See article in the Bulletin of the American Museum of Natural History, Vol. XXXVII, Art. XI by W. D. Matthew and Walter Granger.

RESTORATION OF DIATRYMA STEINI. THE BIRD WAS ABOUT SEVEN FEET IN HEIGHT. $\times \frac{1}{25}$
(Courtesy of the American Museum of Natural History)

a few more pieces of the foot-bones of *Diatryma* of an apparently larger species than the southern one. This Dr. Shufeldt has called *Diatryma ajax*. Last summer, however, Mr. William Stein, one of the American Museum's trained fossil collectors, while searching a small and hitherto unexplored section of the fossil beds or 'badlands' of the Bighorn Basin in northwestern Wyoming came upon this magnificent new specimen which represents a third species and which has been named in honor of its discoverer, *Diatryma steini*.

The bones were found somewhat disorganized and were inbedded in a layer of soft bluish shale. Parts of both legs had been weathered out for some years and were lying on the surface, and it was the sight of these which led to the discovery.

Because of the remarkable completeness of this new specimen we are able to reconstruct the skeleton of *Diatryma* with a fair degree of accuracy—even to make a life restoration of the bird. All important parts of the skeleton, with the exception of the sternum, are present, and when the bones are articulated we have a bird standing



RECONSTRUCTED SKELETON OF DIATRYMA STEINI. $\times \frac{1}{17}$
(Courtesy of the American Museum of Natural History)

nearly 7 feet tall. The massive neck was surmounted by a great head 17 inches long with a powerful deep compressed beak and strong lower mandibles. The legs were of moderate length and stockily built, but the wings were reduced to a point where they could have been of but little use to the bird, even in running. Among living birds the Cassowary furnishes the closest parallel in wing reduction.

Diatryma has no near living relatives. The peculiar South American Seriema shows some general resemblances, especially in the skull and pelvis, but the Seriema is a smaller bird and has the power of flight. Of the living flightless birds, the Ostriches, Rheas, and Cassowaries, there is a similarity in the reduced wings but there the resemblance stops. Among the extinct birds the Patagonian *Phororhachos* with its small wings and large powerful skull resembles *Diatryma* both in size and proportions, but a careful comparison of the two shows that this resemblance is merely a superficial one and that there is no true relationship. *Gastornis* found near Rheims in northern France in deposits of nearly the same age as those in which *Diatryma* was found, may be distantly related, but as *Gastornis* is known only from scattered and fragmentary bones, it is not possible to make satisfactory comparisons. *Diatryma* then stands pretty much by itself in the bird world, and we know nothing of its ancestry or its descendants. It is probable that it became extinct during the Eocene period, along with several contemporary groups of mammals. Of its range it can only be said that it lived in New Mexico and Wyoming and possibly extended its range westward as far as the Pacific coast. The climate of the Rocky Mountain region during early Eocene times was warmer and more humid than now, and the mountains had not reached their present elevation. Of the bird-life of that time and in that region we know but little. The few bits of fossil birds found have been identified as Turkey, Grouse, and Eagle, and the like, but how closely they really resembled these modern birds to which they have been referred it is not possible to say until more complete skeletons are found.

The food habits of *Diatryma* are a matter of conjecture. The skull suggests that it was a flesh-eating bird but a glance at the feet shows small, weak claws hardly adapted to seizing or even holding prey of a size which the bird would be likely to feed upon. Also, it will be noted that the beak is not hooked at the tip as in most modern birds of prey. The beak may been have used in feeding upon large fruits or seeds after the manner of the Parrots. There is, in fact, a good deal of similarity in the structure of the skull between *Diatryma* and the Parrots, a resemblance which may have been brought about by similar food habits. Another suggestion which has been made is that *Diatryma* waded about in the shallow streams and fed upon the fresh-water clams which were abundant there, using the great beak to crack open the shells. Whatever his food habits, *Diatryma*, with his great size and powerful neck and head and strong beak, was undoubtedly the bird monarch of his time and, indeed, there were but few mammals of his day which would have cared to take issue with him.

The Schuylkill Heronries

By F. L. BURNS, Berwyn, Pa

IT IS well known that the Black-crowned Night Heron returns year after year to the same breeding-place, and that the heronries are permanent if undisturbed. I believe that the colonies of the Schuylkill River region are of comparatively recent occurrence, since they were unknown to our earlier ornithologists, and Wilson and Audubon were very familiar with this ground. It would seem probable that the breaking up of the great tide-water colonies of the lower Delaware valley compelled this species to seek asylum inland; and the selection of isolated groves situated on rising ground, often at a considerable distance from any large stream or swamp, proves that even this apparently stupid bird has profited by experience. However, nesting early in April before the leaves have formed, it is at a distinct disadvantage in a deciduous wood.

Heronries containing over one hundred pairs of birds are unusual in this region for economic reasons. There is, of course, a limit to the feeding-range, probably of 15 miles radius in the breeding-season, and even then there must have been an overlapping in the hunting-grounds of the various colonies, since the extreme distance between the Fort Washington and Weisenburg colonies is only 40 miles. I am sure that some sort of communal leadership exists in every colony and an interrelationship of all the colonies of this region.

The first colony of which I have knowledge was located in a grove at the rear of the old encampment of Wayne's brigade, Valley Forge, Chester County. About 1870 a party of Norristown gunners slaughtered many of the breeding birds, and the site was abandoned; the survivors are said to have formed, or materially increased, a colony situated on the Skippack, just above its juncture with the Perkiomen Creek, near Evansburg, Montgomery County. Dr. W. E. Hughes visited it some time previous to 1880, Messrs. F. S. Rose and J. H. Wilson in 1885, and it was found in about the same place as late as 1892, though greatly reduced. Continued persecution had driven it further up the Perkiomen when Mr. R. C. Harlow found about twenty nests on the lower slope of Spring Mount near Zieglersville, in 1907, and it was deserted two years later.

Dr. Warren states, in 1888, that a colony existed for many years along a good-sized stream near Blue Rock, Berks County.

About 1886 Mr. D. N. McCadden and Dr. Hughes discovered two large colonies, scarcely a mile apart, in detached groves at Port Kennedy and Red Hill. I visited the former in 1900 and found about fifty nests in the tallest oak and chestnut trees. Every heronry seems compelled to support one or more families of thievish Crows, but this community for many years had a sort of feudal lord in the form of a Cooper's Hawk. No Heron would build near his nest, hence part of the nests were on the top and the remainder at the foot of the hill. I visited the locality on April 16, 1905, and counted fifty-seven nests, all

inhabited; Mr. C. H. Rogers found but twenty nests with young on May 20; the following winter the timber was cut from this tract, and the birds formed a new colony the succeeding spring at Valley Forge.

The Red Hill colony contained ninety occupied nests in high ash, chestnut, oak and cherry trees on May 26, 1914, though someone had 'shot it up' on May 3, and there were dead birds found. A visit by some friends on June 20 revealed some twenty-five freshly killed adults, shot for their plumes by Italian quarrymen, and the survivors increased the Valley Forge colony the following year, though it is probable that they attempted to breed on the old grounds early in the season.

The Fort Washington colony of one hundred pairs normally was located on the eastern slope of Militia Hill, near the Wissahickon Creek, Montgomery County, in mixed chestnut timber. Mr. G. B. Benners first saw the birds at this place in 1892 and then continuously until 1902, when there were about twenty pairs. At this date he found dead birds lying around and the nests deserted, the work of three boys of rich and influential parents of the neighborhood. They had shot the birds as they flew from the nests and even pulled down many of the nests. Naturally this colony passed out of existence.

Probably the successor to the Blue Rock colony was located on the Sacony Creek near Weisenburg, Lehigh County. Mr. W. H. Leibelsperger writes me that it was a most pitiable sight when he and his friend approached it in May, 1904; the nests and eggs were wantonly destroyed and many of the poor birds slaughtered; only a few birds remained, and a single nest found 60 feet up in a pine contained heavily incubated eggs.

About three weeks later some fifty nests were discovered in a small tract of pine woods near Moselem, Berks County, probably the refugees of the Weisenburg colony.

The Valley Forge colony was founded in 1906 through the enforced removal of the Port Kennedy colony as previously mentioned. Situated in a thicket of saplings of 25 years' growth, I found thirty-five nests at an average height of less than 25 feet, on April 30, and a later visit convinced me they had had a successful season. May 30, 1907, there were twenty-seven new nests, and later in the season Mr. A. C. Redfield counted one hundred and fifty nests, presumably the accretion of the Perkiomen colony. During 1908 it was reported that the Italian laborers working nearby were carrying away bags of young for food. On April 20, 1909, a visit revealed about one hundred nests, not all occupied, and the birds appeared much harried. A visit by Messrs. Redfield and L. S. Pierson on May 9 found the thicket deserted. The birds had been constantly annoyed by Italian pot-hunters and well-meaning visitors. As late as August 8, 1910, I saw eight adults about the ground in an open pasture, waiting for some intruder to depart from the grove, where they were unsuccessfully attempting to nest; the wretched remnants of a promising colony of two years previous.

This colony doubtless united with the Red Hill colony, and the ground remained vacant until 1915 when I counted fifty-six nests, some yet with young, on August 18. My visits in 1916 were made on April 16, May 14, and 28, and July 3, one hundred and twenty-seven inhabited nests were found from 40 to 70 feet up in ash, oak, and cherry trees, and I am pleased to state that the birds had a very prosperous year. They were quite tame, and the only annoyance came from two pairs of Crows nesting in their midst. That they were living off of the Herons was amply proven by the twenty empty nests, the reduced average in a brood and the discovery of four young with their eyes pecked out. Another season I hope to destroy all the Crows' nests in the wood. However, there is no warden, and this fine colony, perhaps the last of its kind in all this region, is at the mercy of the first vicious person that may chance upon it, when it will become only a memory.

I would add a word of caution to bird-lovers when visiting heronries: Do not enter a colony until the leaves have formed a screen; enter at a point that will enable the birds to retire undisturbed to an unoccupied part of the wood; keep together, walk slowly, keep quiet, and do not stay long. Remember that the Crows are looking for a disturbance that will enable them to steal the eggs and young, and knowledge of the locality should be intrusted to the chosen few.

WOOD PEWEE, NEST AND YOUNG
Photographed by A. A. Allen, Ithaca, N. Y.

Chronicles of a Hummingbird Family

By MINETTE SHERMAN, Glendale, Cal.

May 9, 1916.—My home is one of those vine-covered, flower-surrounded bungalows so prevalent in southern California. Enclosing the garden in the rear is a latticework fence over which roses and honeysuckle climb in wild confusion. Within are flowers, bees, and sunshine, and here dainty feathered people gather to eat of the crumbs and grain that we scatter.

This morning, when standing beneath a small pepper tree in the garden a tiny Hummingbird perched just 2 feet above my head. I noticed several long silken cobwebs stretched about the limb. I watched her come and go the rest of the day and knew that a nest was in progress.

At night the children and their father were told of our good fortune, and all were delighted.

May 10.—Early this morning before my sleeping world of people were awake, while the morning was still misty and heavy with earthy odors, I looked for the embryo nest and beheld it fast assuming proportions. As I started to leave, the little Hummingbird darted past with a tiny bit of down which she placed in the nest after which she sat upon it, squirming and shaping the inside with her body. The nest consists of gray cobwebs and fluffs from cat-tails, with occasional bits of lichen or tiny flecks of bark.

May 11. -How can I begin with today's happenings! In the first place the nest must be about half made.

While I was looking in it, she came with a long silken thread —some spider's web, no doubt—but upon seeing me so close, flew to a near by wire. In an instant another came, the male, and flew in violent circles about her. Over the garden fence she darted, poising herself in the air. The male flashed after her and with lightining-like rapidity whizzed back and forth before her "like a bronze pendulum."

I find this to be the Costa Hummingbird, one of the six species that nest within the borders of California.

This afternoon I went out to see how the work was progressing, when a rush of wings announced another bird. This proved to be an English Sparrow. Mrs. Hummer immediately flew at the intruder, chasing her about in the tree quite merrily until the Sparrow became angry and turned upon her. Clinging quietly to a limb, she opened her bill and said as plainly as possible, "Ah, is it your tree, Mrs. Hummer! Ha! ha! I must go away! You are mistaken, my dear friend, I shall not depart until I am ready." Mrs. Hummer observing that the Sparrow no longer feared her, went on with her work while the Sparrow flew away. I passed into the house, chuckling over the encounter and admiring the bravery of the little sprite in attempting to drive away the larger bird.

In about ten minutes I came out again and glancing up into the tree saw what I supposed was Madame at work again. But upon looking more care-

fully I discovered it to be that little vixen of a Sparrow standing in the nest tearing out huge billfuls right and left. What an outrage! What will the Humingbird do when she returns and discovers this vandalism?

She soon appeared, settled on her nest, and began to work as though nothing had happened.

May 12.—This morning, early, before the others were awake, I went out to investigate, and in peeping into the nest discovered an egg. It is pure white and so thin and delicate that it seems translucent.

May 14.—This morning the nest contained two eggs.

May 16.—Wishing to make a sketch of her, I stood on a chair, but as I raised up over the nest she flew off and whirred about me. I stood very still and she came back giving me an opportunity to sketch her at close range.

May 19.—Just a week ago the first egg was laid. She has constantly added to the nest since then, making it noticeably deeper. Today I stood on the chair as before. This time she remained quietly on the nest. The children and their father came also to see our little friend. I had a fancy to try an experiment such as I had read of some bird-lovers doing. Carefully sliding my hand along the limb until I reached the nest, I placed two fingers on her back and *stroked her feathers.*

May 28.—This morning I beheld the first little fledgling—a tiny naked object no larger than a honey-bee. The little creature is blackish in color and entirely naked except for eight tiny hairs on each side of its backbone. The head is large and moves from side to side; the bill is yellow and short, and on each side of the head are black skinny knobs for eyes.

May 29.—Two tiny bits of bird-life are inclosed in the miniature nest—two little babies wabbling their grotesque heads about. I hoped to see them fed when the mother returned, but when she saw me she became nervous and brooded them instead. I walked away, pretending not to notice. She flew to the honeysuckle vines, and I came back quietly. Returning, she alighted on the side of the nest and fed them from her bill by what the naturalists call regurgitation. They opened their bills very wide, and she rammed hers down their throats, ejecting by a convulsive effort partly digested honey and insects from her own throat. I could see only the babies' bills above the rim of the nest. After each had had a morsel, she brooded them in lieu of rocking them to sleep.

May 31.—It is astonishing how they grow; in two days they have doubled in size.

June 3.—Their bills are turning black, pin-feathers are showing all over them, and an opening of the eye is visible.

June 6.—This morning at about 11 o'clock was the last time I had noticed the mother bird. Early in the afternoon the children came from upstairs, excitedly calling me to come quickly and see a dead Hummingbird caught in the screen. It must either have been unaware of the screen in its flight, or in an attempt to catch insects had fastened its bill in the meshes. Was this

our Hummingbird and what would become of those poor helpless babes? Throughout the day we kept a vigilant outlook about the nest, hoping for the return of the little mother. Giving up in despair, I tried to feed them myself. Preparing some honey and warm water, I tried to force it down their throats, but they shook their heads and would have none of it. Suddenly I heard a whir of little wings, and from over my head flashed their own mother. Words cannot express my relief.

June 13.—They are now entirely covered with feathers, the green showing faintly on their backs, the wings mottled brown and gray, with three white tail-feathers on each side of the little tail.

June 18.—Yesterday at about 5 o'clock in the afternoon, I peered into the nest and found one nearly out. As I watched, it flew into the topmost twig of the tree and from there to the honeysuckle vine. I approached, carefully putting my hand over it, but it clung so tenaciously that I had to tear from the vine the twig upon which it rested. I carried it in my hands to show to the children. When I tried to put it back it held so tightly to my hand that I was afraid I might injure the little claws in pulling it away. Just when I thought I had the fly-a-way one in the nest with his more peaceful brother, off he flew again into the top of the tree. When I retired for the night he was still there. This morning we could not find him. The other one was perched on the edge of the nest, ready for flight.

June 20.—Yesterday both left the nest. They have become very fluffy and almost as large as their mother but their bills are shorter and the underparts pure white.

June 21.—The pepper tree is deserted; the nest old and forlorn. What a wonderful experience my acquaintance with these feathered people has been! How I shall miss them from my garden!

RUBY-THROATED HUMMINGBIRD
Photographed by A. A. Allen, Ithaca, N. Y.

Notes from Field and Study

Seventeen Warblers in a Single Willow Tree

Spring and the migration were extraordinarily late this year in Pittsfield, Mass. Until May 18 only April birds—not one species typical of May—was seen by the writer. On that day and the following the usual arrivals of May's first two weeks flooded in, and Sunday, the 20th, came warm but cloudy, promising a high tide of Warblers. About 9 A.M. the writer was standing by a bridge over the dirty little river, with mills above and mills below and trolleys clanging by, where a great willow tree sloped out over the surface. Swifts and Swallows were darting low over the water, Grackles, Robins and Song Sparrows hunted along its banks, an Oriole and a Downy Woodpecker were heard overhead, and the voices of a Catbird and a Yellow-throated Vireo were not remote; but in the tree itself sparkled a Warbler treasure! First, a number of Northern Parulas were noted; in the same instant Chestnut-sides and Myrtles were seen to be almost equally numerous; and then several Black-throated Greens appeared. Only the two first-named were making any sound; the gray weather seemed to take away the spirit of song, recompensing us by keeping the Warblers low in the leafless but catkin-veiled tree. The fifth species seen was a dun little thing, with a faint flush of yellow on her throat and absolutely no other insignia anywhere. While the idea 'Tennessee?' was still but half-formed—for the writer had never before seen a Tennessee Warbler—a sixth guest fluttered down, clinging to the bark. Pulse leapt in arteries, for here at last was a Warbler the observer had fervently sought each May for fifteen years till it had become a symbol for the unattainably rare—a Cape May! Nothing could have given more delight; but while avid eyes were watching, a flash of gold brought down a gorgeous Blackburnian, a necklace of black diamonds almost tinkled 'Canadian,' and two black-and-salmon male Redstarts scintillated into the tree. For a few minutes the onlooker revelled amid these riches. Then a wiry song heralded the creeping approach of a Black-and-White, and a Magnolia also twinkled into view. Suddenly a Blackpoll emerged directly under him, and then a Yellow Warbler, flying upstream, paused an instant in the tree. This was unbelievable! Thirteen Warblers in as many minutes in a single tree in such a site? Wasn't it hallucination? One had but to imagine a Warbler, and lo! he was at hand! And now came a wheezy 'song' preluding a handsome Black-throated Blue. The Chestnut-sides and Parulas were now swarming in the scanty bushes at the willow's base. We looked down, and rubbed our eyes: a Bay-breast—one lone plump ruddy male Bay-breast! Then flitted in and out an ever-agile Wilson's Black-cap; and lastly up peered the black mask of a Northern Yellowthroat. Besides these seventeen Warblers the tree held for a while a Warbling Vireo. Save the three species first noted, none was represented by many individuals. The tree looked like nothing so much as a bird-chart by the Massachusetts Audubon Society illustrating the May Warblers of Massachusetts, so vividly alive was its close-bounded area with these clear-marked, brilliant transients, so long halted by the cold and now pouring northward in compact flocks—seventeen species to a flock!—and eddying through a single city willow on the way.—SAMUEL A. ELIOT, JR., *Pittsfield, Mass.*

Warbler Notes from Bennington, Vt.

In regard to R. E. Robbins' query in the March–April BIRD-LORE concerning the increase in the number of Cape May Warblers, our observations, which are

limited to Bennington, Vt., and vicinity, have been as follows: From 1901 to 1911 inclusive, not a single individual of the species was seen; in 1912, a dead male was found on May 8, and a pair was seen daily from May 16 to May 22; in 1913, a pair was seen on May 13, and for two or three days after; in 1914, a pair was seen on May 6; in 1915, a pair was seen on May 16 and several individuals during the following week; in 1916, one was seen May 5 and eight to ten the following week.

The Tennessee Warbler has shown a like increase during the last two years. From 1901 to 1914 inclusive, only one inidvidual was seen (May 11, 1912). In 1915, there was a large migration beginning May 20 and ending May 26. During the last two days of this migration, a large number were in the village, frequenting almost entirely the elm trees. In 1916, there was another large migration, beginning May 19 and ending May 30. During both these migrations, the birds were singing a great deal. The song of the Tennessee Warbler is a loud one—as loud if not louder than the Redstart's. He starts with a repetition of notes like the Chestnut-sided. After three or four, he gives a hitch in the song and then continues but on a different note and not quite so loud. Or it might be described as similar to the Chipping Sparrow's; but shriller.

Two other species of Warblers have shown a marked increase in this vicinity during the last two or three years, namely, the Bay-breasted and the Wilson.

The Evening Grosbeak has visited this neighborhood again this past winter.

On October 7, 1916, we saw a flock of White-winged Crossbills—numbering over 40—on Stratton Mountain, which is a peak in southwestern Vermont.—Dr. and Mrs. Lucretius H. Ross, *Bennington, Vt.*

An Evening Grosbeak Summers in New Hampshire

About the middle of August, 1916, Miss Emma Johnson, of Nashua, N. H., noticed, one morning, a peculiar bird feeding upon the seeds of a lilac bush just below her window. As it was an entirely new bird to her, she got her field-glasses and watched it for at least fifteen minutes. There could be no doubt about its being a male Evening Grosbeak. There was the great beak, the bright yellow on head and body, the black wings and tail, and the large white wing-patches. The lilacs were close to the house, and every marking on the bird was plainly visible without the glasses. The bird did not return again. Miss Johnson is a close observer and could not have been mistaken.

This bird may have been injured and left behind or it may have found New Hampshire to its liking and decided to become a permanent resident, as some of us featherless bipeds have. A report has come from Hanover that a pair of these birds once started a nest near that town but left it unfinished to migrate with the flock. This report is rather vague but entirely credible. The bird observed by Miss Johnson may have had a mate, and they may have nested hereabouts. At any rate, it will be well for bird students to keep their eyes wide open and watch the Evening Grosbeaks. If these birds should begin to nest in New England they would be a great acquisition. Has not the Prairie Horned Lark worked eastward until it has reached New Hampshire and become a permanent resident? If we can hold the Grosbeaks at our food stations late enough in the spring, perhaps the breeding instinct will seize upon them before the migrating instinct, and they might remain and breed. The coniferous forests of northern New England offer ideal nesting facilities.—Manley B. Townsend, *Nashua, N. H.*

Evening Grosbeak in Connecticut in May

While looking for birds near North Branford, Conn., in a sparsely settled district, our attention was attracted by a persistent chirping which resembled that of an English Sparrow but was clearer and

higher pitched. Upon investigation we found it came from a flock of fourteen Evening Grosbeaks. When we first saw them they were feeding on the ground near the edge of a field, but a little later they flew to a sugar maple where they allowed us to observe them closely. There were about five males in the flock.

This species has not been observed in New Haven County to our knowledge, so late in the season (May 12).—Richard Edes Harrison and John B. Derby, *New Haven, Conn.*

Horned Larks at Rochester

I have seen in Bird-Lore notes on the Horned Lark in winter at Troy, N. Y., and on the Prairie Horned Lark in summer in Nebraska. Here in Rochester, N. Y., we have the Prairie Horned Lark all the year round. On March 10, 1916, when we were having the worst part of our winter, I saw two of the birds on the snow and ice while I was skating on the eastern widewaters of the Erie Canal. On April 2, I saw one bird and found its nest with four young in it on the well-kept slopes of Cobbs Hill reservoir, which supplies part of the city with water. The nest was made of just a few pieces of grass woven together on the ground and was within a quarter of a mile of the widewaters.

Again, on October 18, I saw two of the Larks back of the reservoir. They were on a short, level stretch of gravelly soil where there was little grass. I did not see them until I started them from the ground, but they could be easily recognized by the combination of their size, white tail feathers, swift flight and sweet notes. The Prairie Horned Lark has been on the bird-list of the Rochester Park Department almost every month of the year.—Raymond Reuter, *Rochester, N. Y.*

A Painted Bunting in Pennsylvania

Miss Esther Heacock writes from Wyncote, in southeastern Pennsylvania, of the visit of a Painted Bunting, which spent two days, May 13 and 14, 1916, in or near a large fern-leaved beech tree on her lawn. "The bird appeared at first in company with some Indigo Buntings feeding upon the ground. The Indigo birds soon passed on, however, leaving their cousin alone but seemingly very much at home and unafraid. Telephone-bells rang and word was passed around among the members of the Wyncote Bird Club, many of whom came to see the rare and beautiful bird."

Vermont Notes

The observations concerning the Juncos and the White-throated Sparrows reported by Eliza F. Miller in Sept.–Oct. (1915) Bird-Lore interested us very much, for we had noted similar conditions.

Heretofore, in this neighborhood, these two species have nested and spent the summer in the mountains, never coming to a lower altitude than 1,000 feet and rarely below 1,500 feet. But during the summer of 1915, Juncos were seen at various points in the valley all summer, and on June 27 a pair was found nesting in a dooryard near the edge of the village at an altitude of about 700 feet.

A large number of White-throated Sparrows, taking possession of a hill not over 900 feet in altitude and 2 miles from the foot of the mountains, remained there all summer singing and nesting.

We also noted two pairs of Canadian Warblers nesting at 1,000 feet, which is 500 feet lower than we have ever found them nesting before.

We laid this change in the habits of these birds to the extreme coolness of the summer in this region.

Another unusual event with us was a migration of the Tennessee Warbler which occurred from May 20 to May 26, 1915, inclusive. This Warbler has been observed here but once in the past fifteen years, and at that time only a single individual was seen.

These birds seemed to prefer the tops of the deciduous trees and were singing con-

stantly. The song is a loud one—as loud, if not louder, than the Redstart's. It starts with a repetition of notes like the Chestnut-sided but after three or four repetitions gives a sort of hitch and then continues as before but on a different note and not quite so loud. One observer likened the song to that of the Chipping Sparrow with a hitch in the middle.—Dr. and Mrs. Lucretius H. Ross, *Bennington, Vt.*

Florida Gallinule in Connecticut in April

On Friday, April 21, 1916, I received a telephone message from a friend in Hartford saying that he had observed a peculiar bird in his yard with its head caught in the lattice work of the veranda. It was immediately liberated, but again it sought protection in a similar manner. From the telephoned description, it was fairly clear that the bird must be one of the Gallinules, but it was rather difficult to imagine for a moment its mission in a place so remote from its natural habitat. I was invited to take possession of the bird and to exhibit it to some of the local bird-students before restoring it to freedom. I took it home and kept it for twenty-four hours, during which period several members of The Hartford Bird Study Club eyed it with much satisfaction. Not being able to cater to its tastes, I liberated it in a favorable spot.

The bird proved to be a beautiful adult Florida Gallinule. According to Bulletin 201 of our State Geological and Natural History Survey, it has never been recorded in Connecticut in the spring, the only summer record being in New Haven in June, 1899, although several autumn records for the state are available.—Arthur G. Powers, *West Hartford, Conn.*

Red-bellied Woodpecker in Iowa

A few days ago a male Red-bellied Woodpecker was observed for the first time in this locality. While it may be possible, of course, that an occasional individual of the species visits western Iowa, careful observation of both summer and winter birds has never revealed one before, and the occurrence may be of interest to other readers. Since first observed he has appeared every day at our suet-bags, affording us ample opportunity to confirm the identification as well as the pleasure of studying his beautiful plumage. —T. H. Whitney, *Atlantic, Iowa*, April 20, 1917.

Snowy Owls in Idaho

A very remarkable flight of Snowy Arctic Owls occurred in southern Idaho the past winter. The first specimen the writer observed was on November 23, 1916. It was remarkably tame at first. I approached within twenty or twenty-five feet of it, and it did not fly. When I tried to photograph it, however, it soon became quite shy. This Owl (presumably the same one) stayed in the vicinity of the writer's home all winter, so it is believed. The last time I saw it, however, was on December 30. Twice I prevented farmers from killing this very beautiful and valuable bird. Reports of Snowy Owls were common during the winter. One firm in Boise mounted no less than thirty-five specimens. The Owls were reported retreating northward about Feb. 9.—Alex. Stalker, *Meridian, Idaho.*

A Song from the Nest

Just at the entrance to one of the large ranches near Pasadena, I heard a particularly rich, sweet song, so wandered up among the plows and harrows, under a fine group of oaks, and finally ascertained that my songster must be in a sapling well out of sight of the road. After a time and no end of dodging and searching, I located a tiny, slim, olive-gray bird, with buffy sides to the head, white underparts shaded with yellow and a distinct white stripe through the eye. It was a Warbling Vireo and oh! how he did sing! A glorious, rippling melody, just bubbling over with joy and pride. I could not have believed that such a volume of

sound could come from so small a bird if I had not seen him at it.

After a time he disappeared, but soon after returned with a fine beakful of food. Evidently he was very anxious that I should not see him go to his nest, for he dodged here, there, and everywhere, and although it did not seem to me that I took my eyes off him for a second, I suddenly missed him and knew not where he had gone. By dint of patience I found him again, or rather his head and shoulders, and as I particularly wanted to see his wing-markings, I cautiously moved a little nearer and found that he was singing while sitting on his nest. It was the funniest thing to watch him. He would half lift himself up and pour forth a joyful burst of song, then snuggle down almost out of sight, then raise himself up to sing again, and so on, till Mrs. Vireo came back to take his place. After allowing himself a long rapturous song from a high bough, he flew off in search of food once more.

The nest was a beautiful little thing, so neat and compact, semi-pensile from the fork of a branch, about 12 feet from the ground and well in sight. It was made of bits of leaves, lichens and vegetable fibers, and matched the surrounding branches so well that although I knew exactly where it was I often had trouble to locate it on subsequent visits.—Henrietta E. Delamare, *Pasadena, Cal.*

A Practical Bird-Bath

Anyone desiring an attractive bird-bath in the garden may have it at very little expense if the following directions are carried out: Excavate a place in the ground thirty-six inches in diameter and 2½ inches deep in the center, with gradual slope to the sides. Make a mortar, using ten pounds of Portland cement, three times the quantity of sand and enough water to mix easily. Pour into hollow, shape with trowel or the hand until it covers smoothly the entire surface. Dust lightly with dry cement and let it stand for several days before filling

A PRACTICAL BIRD-BATH

with water. Many changes and additions may be worked out,starting with this simple plan. Last summer I added to mine a narrow run-way ending in a small basin 3 inches deep and 6 inches in diameter. The larger birds, like the Robin, Flicker, and Grackle loved to sit in this basin after bathing in larger ones.

Five minutes' work each morning with garden hose and broom will keep the bath clean. In hot weather I let the water drip in it all day, hiding the hose in shrubbery which, when planted around the edges, adds greatly to the beauty of bath.

Do not plant anything higher than 5 or 6 inches or you will have a hiding-place for cats. Violets, hepaticas, dwarf sweet alyssum and low-growing ferns are nice for the purpose.—May S. Danner, *Canton, Ohio,*

Dressed in White

While at my country home in Monroe County, W. Va., this summer, I had the interesting experience of seeing something rare in bird-life.

It was nearly dusk one July evening and I was strolling in the yard when a white bird flitted past me.

I knew there were no Pigeons in the neighborhood, and, besides, the bird was smaller than a Pigeon.

It puzzled me. I followed it with my eyes until it alighted in a low tree in the orchard, but when I drew near the dividing-fence for a closer view, it flew out of sight amid the shrubbery.

About a month later I saw it again, as I went after my mail. It was sitting on the fence near the mail-box. A dozen or more Robins were on the fence and ground. As I approached, all flew across the road into the meadow. I cautiously peered over the fence, and there was my white bird, hopping about among his mates, head cocked to one side in the listening attitude of our old friend, the Robin.

I even heard his cheerful Robin chirp. In size and shape he was like the rest, but if there was a single dark feather in his plumage, I failed to detect it, so I think I saw that uncommon bird, a snow-white Robin.—(Miss) Lena Leoti Johnson, *Covington, Ky.*

A White Swallow

I am writing to inform you of a bird which was observed here several times during the last week of July, 1916. Three other men and myself observed it July 29, 1916. It was apparently a white Barn Swallow. It was with other Barn Swallows, chasing over hay meadows. It had the size, shape, actions and general characteristics of Barn Swallows, but was pure white, except its bill, which showed dark as it flew. The other Swallows seemed at times to chase it, then at other times it flew among them unnoticed. It is the only pure white bird ever seen by many in this town.—R. T. Burdick, *Crown Point, N. Y.*

An Albino Grackle

About noon one day the middle of this month, my friend, Mrs. Pound, heard an unusual fussing among the birds in her back yard. Her home is right in town, not more than three blocks from the business section, but she has a lot with trees, shrubs, and flowers in the back yard.

Coming out, she found four of the ordinary Bronzed Grackles in one of the trees, and one exactly like the others except that he had two white feathers, one on either side of the tail, about the middle. The other Grackles were not fighting him especially, but were very evidently curious and anxious to find out about the strange bird, and all of them, including the white-feathered one, kept repeating their metallic calls with rather more emphasis than usual.

We have seen entirely white or albino Grackles in the outskirts of town, but this is the first reported around here having just the two white feathers in the tail.—Lillian S. Loveland, *Lincoln, Neb.*

THE SEASON

II. April 1 to June 15, 1917

Boston Region.—April was abnormally cold; snow fell on the 9th and the temperature remained below freezing for thirty-six hours. Juncos were present in thousands and Fox Sparrows in hundreds, delayed by the storm for three or four days. After their departure there was little evidence of migration for ten days, until forty-eight hours of mild weather on the 21st and 22d brought Barn Swallows and Myrtle Warblers (early) and Field and Chipping Sparrows (late). Again there was practically no movement of birds for two weeks. A marked increase of White-throated Sparrows was noted May 6, after which came only scattered new arrivals until the 16th, when overdue residents (e. g., Swifts and Oven-birds) began to appear in good numbers.

Thus far cold and rainy weather had prevented a general migration of any magnitude. The trees were nearly bare, the vegetation over ten days later than normal. Birds had appeared in *small numbers, much behindhand,* and had been *silent.* Even the nesting Robins had sung little. The swamps, woods, and scrub-land were nearly barren of bird-life. Migrants were noted locally, in small flocks, feeding silently, low in the leafless trees, and often on the ground.

On the establishment of summer weather (May 18-20) there came a rush of Warblers in the normal manner—in full song and well distributed. In spite of cooler and rainy weather, this influx of Warblers, comprising the transients, continued into the first week of June and proved the most remarkable Warbler-migration in the history of this region. It was remarkable for the exceptionally late dates to which many birds tarried, for the great number of birds, and especially for certain rare Warblers in numbers actually and proportionally far above previous records. Every day for two weeks one of our rarest, the Tennessee, was abundant; a dozen or more were frequently seen collected in some favorable locality and their song was heard throughout Lexington and surrounding towns until June 8. Cape May and Bay-breasted Warblers, usually rare, occurred commonly, although less so than the Tennessee.

A few Evening Grosbeaks lingered in Lexington till May 30, Juncos till the 22d, and there was a definite migration of Pine Siskins between May 20 and June 4. During the first few days of June our breeding Cedar Waxwings arrived. Parula and Black-poll Warblers are reported from West Roxbury on June 15—exceptionally late.—Winsor M. Tyler, Lexington, Mass.

New York City Region.—April started with the migration about up-to-date or a bit ahead (e. g., Great Blue Heron and Pine Warbler, Runyon, N. J., April 1), but the failure of Tree Swallows, Yellow Palm Warblers, etc., to reach anything like their usual abundance till toward the end of the month indicated a tardy arrival of insectivorous species. The daily mean temperature of the first twelve days of May averaged 10° below normal, so that a 20-mile walk near Plainfield, N. J., on the 13th, over a route good for a hundred species at the height of the spring migration (normally about this date), netted barely eighty-six, and these included the following birds usually gone northward by this time: Rusty Blackbird, Junco, Yellow Palm Warbler, Ruby-crowned Kinglet, Sapsucker, Siskin (another next day), and Savannah Sparrow—all but the last three (one each) represented by at least ten individuals. Furthermore, there were many more Blue Jays and White-throated Sparrows than usual so late, and Chipping Sparrows and Barn Swallows, of which few if any but breeding individuals are normally here at this date, were still present in flocks. And of the following species, all of which should have been well represented

and many of them very common, not an individual was noted: Kingbird, Crested Flycatcher, Wood Pewee, Rose-breasted Grosbeak, Indigo Bunting, Scarlet Tanager, Red-eyed and Yellow-throated Vireos, and Cape May, Bay-breasted, Black-poll, Blackburnian and Canada Warblers; of still others there were but one or two lonely specimens. Toward the end of the week a heavy movement set in, and observers agree that the height of this spring's migration was on May 19 (96 species were noted by Mr. A. A. Saunders at Norwalk, Conn., on this day), but there must have been a general departure that night, as few transients were present next morning. A hardly less notable wave followed which lasted at least over Decoration Day when 250 Barn Swallows, a Tennessee Warbler, and other Warblers and other transient land-birds were seen at Long Beach, L. I., as well as 1,200 shore-birds of ten species, including sixteen White-rumped Sandpipers. On the 26th and 27th Mr. J. T. Nichols and the writer noted, without special effort, ninety-two species at Mastic, L. I.—one flock contained eighteen species of Warblers besides other birds. Mr. Saunders gives the following Norwalk dates among those later than previously known from Connecticut: Sapsucker, May 13; Rusty Blackbird, May 15; Golden-crowned Kinglet, May 16; Junco, May 17; Ruby-crowned Kinglet, May 18; Blue-headed Vireo, May 24; Siskin, May 26; Savannah Sparrow, May 26; Magnolia, Bay-breasted and Blackburnian Warblers, June 2; Canada Warbler, June 3; Tennessee Warbler, June 9; Black-poll Warbler, June 10. Tennessee and Bay-breasted Warblers were remarkably common about New York City this spring, and the Cape May was up to its standard of recent years.—Charles H. Rogers, American Museum of Natural History, *New York City.*

Philadelphia Region.—April weather being normal, most migrants arrived on time. An early Wood Thrush was noted at Haverford, Pa., by Mr. Wm. L. Baily on April 19, and a rather early House Wren was seen at Beverly, N. J., on April 20. These birds usually arrive about a week later. Good-sized flocks of Black Ducks and an increasing number of Wood Ducks were reported at various points. A fine flight of Greater Yellow-legs was observed along the Delaware River. These birds are apparently increasing. The latest reports of Evening Grosbeaks that I have are: Reading, Pa., April 22, Miss Anna P. Deeter; Mt. Holly, N. J., April 26, Mr. N. D. W. Pumyea; Yardville, N. J., May 7, Mr. C. H. Rogers. A Blue-gray Gnatcatcher was reported by Mr. Geo. Spencer Morris at Wenonah, N. J., April 2.

Cold and rainy weather brought us the most unseasonable May in ten years, and while some of the migrants were on time, certainly the bulk of the Warblers and Thrushes arrived from a week to ten days late and seemed very loath to leave; others came crowding in and a congested migration resulted. Between the 20th and 30th of May the woods were alive with birds, mostly Warblers. Of the rarer species, Golden-winged, Wilson's, Cape May, Bay-breasted and Tennessee Warblers were seen at numerous stations. The Tennessee was especially common and its loud Chipping-sparrow-like song was heard on village streets; this Warbler has been rarely noted about here in the spring. About the middle of May a remarkable invasion of White-crowned Sparrows occurred: flock of twenty-four, Reading, Pa., May 17, Miss Anna Deeter; flock of fifty, West Chester, Pa., Dr. C. E. Ehinger; many smaller flocks reported. Some occupied the lawns during their short stay and fed mostly on dandelion seeds.

On Decoration Day seven members of the D. V. O. C. walked together from Riverton to Camden, N. J., and recorded eighty-two species, including seventeen transient species, few, if any, of which are normally here so late in the month. Among them were Herring Gull, Black Tern, and Tennessee, Bay-breasted and Wilson's Warblers.

Doubtless the birds suffered because of the unseasonable weather, for numbers

were reported found dead or dying, some very much emaciated.

The second week in June (Black-poll Warbler, June 9 and 11, Crosswicks, N. J. —Mr. C. H. Rogers) saw the end of the migration, which was the longest drawn out, in many respects the most interesting ever witnessed in this vicinity.—Julian K. Potter, *Camden, N. J.*

Washington Region.—April and May showed a continuance of the peculiar conditions of March. The migration as a whole proved to be exceedingly interesting and furnished many unusual records. Notwithstanding the cold weather, which, excepting for a few days, continued throughout the entire period of migration, a number of early migrants arrived ahead of time, several of them earlier than previously recorded. Among these may be mentioned the following (the dates in parentheses representing their earliest previous records): The Indigo Bunting, April 22 (April 25, 1908); Yellow-breasted Chat, April 14 (April 16, 1876); Blue-winged Warbler, April 24 (April 26, 1891); Northern Water-Thrush, April 21 (April 22, 1894); Rose-breasted Grosbeak, April 29 (May 1, 1907); Whip-poor-will, April 1 (April 8, 1909) and the Greater Yellowlegs, April 8 (April 19, 1887).

All the Swallows, except the Bank Swallow, arrived about a week ahead of their usual time, and many other species several days in advance of the average. On the other hand, a number of species, particularly the late migrants, were very much behind time, showing thus the great irregularity of this year's migration. For example, the Yellow-billed Cuckoo and the Black-billed Cuckoo came on May 11, four days late; Ruby-throated Hummingbird, May 11, ten days late; Warbling Vireo, May 11, ten days late; Nighthawk, May 11, eight days late; Bay-breasted Warbler, May 17, six days late; Yellow-bellied Flycatcher, May 24, ten days late.

The first appearance of most of the species that arrived ahead of time, as well as of other common birds that arrived about as usual were, however, represented by one or two, or at most, a few individuals, and the bulk of the species was considerably delayed in arriving.

Evidently influenced by the unseasonably cool weather, the winter residents and migrants remained much later than usual, in many instances far beyond any previously known record, and at the present writing (May 31) many migrants are still here. Some of the most interesting are as follows, the date in parentheses indicating, as before, the latest known previous occurrence: Bufflehead, April 15 (April 10, 1859); Ring-necked Duck, April 11 (March 13, 1842); Goldeneye, May 20 (April 1, 1859); Lesser Yellowlegs, May 17 (May 1, 1900); Red-backed Sandpiper, May 12 (April 22, 1887); Herring Gull, May 20 (May 10, 1887); Ring-billed Gull, May 20 (April 28, 1887); Sora, May 20 (May 5, 1900); Swamp Sparrow, May 27 (May 19, 1859).

A number of birds of rare occurrence about Washington made their appearance during April and May, among them the Double-crested Cormorant, seen on several days in May, the latest by Mr. L. D. Miner on May 20; the Laughing Gull, seen on May 20; the Black Tern, seen on May 17 and on several earlier dates; the Caspian Tern, noted on May 20 and several earlier dates; the Common Tern, on May 20 and 26 and on several earlier dates; the Northern Pileated Woodpecker, seen on April 13; the Red-backed Sandpiper, seen May 12; the Little Blue Heron seen by Mr. William Palmer at Miller, Va., in May; and the Prothonotary Warbler, seen on May 13, at Falls Church, Va., by Mr. I. N. Gabrielson.

Furthermore, a number of species, including several of more or less uncommon occurrence in this region, have been unusually numerous this spring. Such are the Yellow-bellied Flycatcher, White-crowned Sparrow, Northern Water-Thrush and Blue-winged, Black-throated Green, Cape May, Bay-breasted, Mourning and Tennessee Warblers.

Birds as a whole were this spring rather unusually abundant, and this, in combination with the large number of exceptional occurrences and late records, make the

migration a memorable one in our local ornithological annals.—Harry C. Oberholser, Biological Survey, *Washington, D. C.*

Oberlin Region.—All records were broken for lateness and for the scattering character of the migration for April and May. There was a small movement—ten species—on April 3 and 4. From the 16th to the 22nd there were daily arrivals of from three to five species, and from then to the first of May they filtered in one at a time, with three on the 25th and 29th, and four on the 30th. On May 7 there were seventeen moving species. On the 13th, 14th and 15th, five, nineteen and eleven species respectively were moving, and on the 16th, six. This constituted the largest migration wave of the season. From the 18th to the 22nd, thirty-seven species were moving, with scattering movements each day until the 29th, when twenty species moved, most of them records of departure. Late Warblers and Thrushes were recorded on June 5.

The most notable feature of this season of migration was the mortality among the more strictly insectivorous birds. The first Purple Martins came on April 2. After about a week of fair weather there came nearly a week of rain and cold which caused the death of nearly all of them. Many were picked up dead or dying on the ground beneath the houses, others died within. All were hardly more than skeletons. Another lot arrived on the 14th and shared the same fate. Barn and Tree Swallows came with this flight, and while more of them survived, some were starved to death. A third Martin arrival occured on the 24th. Apparently these were wiser, for their numbers fluctuated with the weather. It appeared that they returned southward for brief periods during the unfavorable weather.

Among the smaller birds, the Yellow-throated Vireo and Oven-bird seemed to be the greatest sufferers; more were found dead or dying from starvation than of any other species. It is not possible to give any reliable estimate of the extent of the destruction of the smaller birds. All one can say is that more dead birds were found this spring than have been found in the six previous years.—Lynds Jones, *Oberlin, Ohio.*

TOWHEE FEEDING YOUNG
Photographed by Avis Criss, Amsterdam, N. Y.

Book News and Reviews

PETS: THEIR HISTORY AND CARE. By LEE S. CRANDALL, Assistant Curator of Birds, New York Zoölogical Park. Henry Holt & Co., New York. 12mo. XII + 372 pages, numerous illustrations.

Mr. Crandall's book treats of Mammals, Birds, Reptiles and Batrachians, and the Aquarium. "Every normal child," he writes, "of whatever race or creed, is born with an innate love of wild things. If allowed to languish from lack of intelligent parental interest and supervision, this natural instinct is gradually lost or degenerates into unintentional cruelty of ignorance. Properly fostered and developed, it is certain to exert a beneficent influence on the trend of developing character. . . . The sterling qualities of kindness, responsibility and regularity are acquired, and many of the problems which perplex the adolescent adjust themselves normally by constant contact with reproductive life."

This is so true that we sometimes regret that the stringency of our laws prohibits us from keeping as pets, *under proper conditions*, certain of our birds which appear to thrive in confinement under proper conditions.

However, there are many other forms of life which take kindly to captivity and with which we may establish those intimate relations resulting from daily associations with creatures that are dependent upon us for existence. It is the longing to establish this relation rather than the desire to imprison, which causes us to confine our pets. No pet is loved more than the one which, given its freedom, still shows its fondness for us by refusing to make good its escape.

Here lies the chief charm of 'bird gardening.' Our lunch-counters, bathing-places and nest-boxes promote an understanding between us and our bird pensioners and tenants which turns the species into the individual; the passing acquaintance into a friend.—F. M. C.

The Ornithological Magazines

THE AUK.—The April issue is largely filled with semi-popular articles that are well worth the perusing, while a sprinkling of the technical leavens the loaf. An obituary on Prof. W. W. Cooke, an A. O. U. Fellow, from the facile pen of Dr. T. S. Palmer, pays tribute to the excellence of the life-work of this indefatigable toiler whose chief contributions cover the field of bird migration in North America. A portrait accompanies the obituary.

Dr. C. W. Townsend 'In Audubon's Labrador' takes us, in 1915, with him over the same ground traversed by the great ornithologist in 1833 and shows us photographs of the country and some of its feathered denizens. It is of interest to note that on the original trip Audubon named Lincoln's Sparrow after a member of his party who secured it, and this was the only new species he added to his list. Dr. Townsend also discusses the status of 'The Labrador Chickadee (*Penthestes hudsonicus nigricans*) in Southward Migration,' and Mr. H. W. Wright, writing under a similar title, deals with the 'wave' of this bird that reached Boston and the vicinity in the fall of 1916.

Swinging to the other side of the continent we may read what Mr. F. S. Hersey has to say on 'The Present Abundance of Birds in the Vicinity of Fort St. Michael, Alaska.' Comparing his observations with those of Mr. E. W. Nelson, the pioneer of 1877–1881, the most marked changes in the bird-life of this dreary locality seem to be in the diminution of the Ducks and Geese.

Mr. J. A. Farley in 'Ornithology at St. Marks' strikes an original vein, cleverly and pleasantly introducing us to the various birds represented in the mosaics in the ceiling of the atrium of the ancient Venetian basilica.

Mr. H. Mousley records 'The Breeding of the Black-throated Blue Warbler at Hatley, Quebec,' and in 'Notes and News,

will be found a number of records by Mr. Mousley and others bearing on the influx of various species from the north during the past winter—Evening Grosbeaks, Hudsonian Chickadees and others among them.

A new species of Red-winged Blackbird (*Agelaius phœniceus grinnelli*), from western Central America, is described by Mr. A. B. Howell, and a new name for the White-breasted Nuthatch, *Sitta carolinensis cookei*, is proposed by Mr. H. C. Oberholser, the old one by a tragic interpretation of nomenclatural rules, being transferred to the Florida form. It would be convenient to have the 'Notes on North American Birds' by Mr. Oberholser presented in systematic order rather than in the haphazard way the series has begun—a systematic ornithologist ought to be systematic first of all. His 'Second Annual List of Proposed Changes in the A. O. U. Check-List,' a compilation of published items is, however, a useful contribution. —J. D.

The Condor.—Of the seven general articles in the March 'Condor,' the two local lists merit special attention. Rust's 'Annotated List of the Birds of Fremont County, Idaho,' occupies nearly one-third of the number and is illustrated by a map and twelve photographs. It includes notes on one hundred and three species based on observations made in the summer of 1916. Fremont County adjoins the western boundary of the Yellowstone National Park, and although it has a much larger proportion of sage brush country within its boundaries, a comparison of its bird-list with that of the Park would be instructive. The carefully prepared 'List of the Birds Breeding in San Francisco County, California,' by Hansen and Squires, is of peculiar interest in showing some of the changes which have occurred in a district of forty-one square miles where within the last seventy years a great metropolis has been built. If the ten species practically limited to the Farallon Islands and the introduced Sparrow and the Ring-necked Pheasant are omitted, the number of species is reduced to fifty-eight. The most remarkable facts are the finding of the Robin, Junco, Pine Siskin, and Pigeon Guillemot in recent years, and the absence of the Brown Towhee which is so abundant and characteristic elsewhere in the Bay region. This list should be compared with the one published by Ray in 'The Condor' for November, 1916, pages 222–227.

Sell describes graphically the havoc wrought among the Brown Pelicans and other water-birds at Corpus Christi, Tex., by the storm of August 18, 1916. As if by way of contrast, this article is followed by a chapter of Mrs. Bailey's delightful description of the peaceful bird-life of the humid coast as observed at Tillamook Bay, Ore.

From a study of one hundred and twenty-three specimens of Williamson's Sapsucker, Swarth concludes that two forms are recognizable and separates the Rocky Mountain bird from the typical California form under the name *Sphyrapicus thyroideus nataliæ* (Malherbe).

Wetmore describes an abnormal egg of the common Coot (*Fulica americana*) found near the mouth of Bear River, Utah, May 29, 1916, and attributes the abnormality in size and markings to "continuous excitement and fear and their reaction through the nervous system, upon the ordinary functions of the oviduct."

Palmer gives the full names of fifty-two writers on California birds—comprising about half of the list of those whose names were incomplete in Grinnell's 'Bibliography of California Ornithology.'

Among the shorter notes Oberholser records the total number of species and subspecies of birds now known from Texas as 605. Clay adds the Savannah Sparrow and Grinnell the Eastern Goshawk to the California list making the total number of species and subspecies in that state list apparently 544.—T. S. P.

Bird-Lore

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Devoted to the Study and Protection of Birds
OFFICIAL ORGAN OF THE AUDUBON SOCIETIES
Edited by FRANK M. CHAPMAN
Contributing Editor, MABEL OSGOOD WRIGHT
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Bird-Lore's Motto:
A Bird in the Bush Is Worth Two in the Hand

THE Editor of BIRD-LORE has been called to Washington to serve as the Director of the Bureau of Publications of the American Red Cross. The duties of this position leave but a small margin of time for other things, and he therefore trusts that for a time BIRD-LORE's correspondents and contributors will pardon all delays in acknowledging their communications.

WE regret that circumstances beyond our control have prevented the inclusion of a colored frontispiece in this issue of BIRD-LORE. The October number, however, will contain a plate of Swallows; the Martins will be treated in December; the Tanagers in February and April. This will leave only the Shrikes, Waxwings, Larks, Crows and Jays, Blackbirds and Orioles, in all five families, three of them with but one or two species, to complete BIRD-LORE's series of colored plates of North American Passeres. This will mean that BIRD-LORE has figured in colored drawings, one-half natural size, nearly half of all the birds of North America.

BIRD-STUDENTS throughout the West will welcome the appearance of a pocket edition, bound in limp morocco, of Mrs. Bailey's standard 'Handbook of Birds of the Western United States.' The practical working value of the book is greatly increased by its new form.

WE hope that the publication in this issue of BIRD-LORE of the occurrence of albino birds will not bring us mere records of the observation of abnormally colored birds. Albinism in itself, as we have before remarked in these columns, is by no means noteworthy. It may be manifested by any species, and whatever may be the underlying factors, they express themselves through an absence of pigment and consequent lack of color.

The unusual, of course, always claims our attention, and the appearance of a white, or partially white Robin, for example, invariably excites interest and comment. This comment, however, is not worthy of record unless it includes some observation on the habits or actions of the bird concerned or of other birds in their relations to it. To illustrate: One of the records in this issue tells of an albino Robin seen in the same locality after an interval of a month. Here the bird's peculiar markings permitted the identification of the individual, always an important matter in field-work. A second record relatse to a white Swallow which other Swallows seemed to chase; and a third describes a partial albino Bronzed Grackle about which other Grackles were 'evidently curious.' The facts given in both these cases indicate that the albino birds apparently were recognized by birds of their species but were not accepted as normal; evidence that birds possess a power of discrimination.

WE learn with great regret that Norman De Witt Betts, an associate member of the American Ornithologists' Union, and a former contributor to BIRD-LORE, was killed by lightning on May 21, 1917, on a ranch in northeastern Utah, in his thirty-seventh year. Mr. Betts' studies in bird-life were made chiefly at St. Louis, Missouri, Boulder, Colorado, and Madison, Wisconsin, localities where he was successively stationed in the employ of the U. S. Forest Service. He left the Service a year ago to become a ranchman in Uintah County, Utah, a region, where he would doubtless have made field studies of much value.

The Audubon Societies

SCHOOL DEPARTMENT

Edited by ALICE HALL WALTER

Address all communications relative to the work of this department to the Editor, 67 Oriole Avenue, Providence, R. I.

CONSERVATION MEASURES

While the attention of the nation is centered upon ways of conserving all available food and economic products, it is a fitting time for Audubon Societies to consider the ultimate uses to which birds are put, and especially, dead birds.

In the preceding issue increased production of poultry and game was urged with a view to supplying more families with fresh, palatable meat and to improving present market conditions. No account was taken, however, of what might be called the by-products of dressed poultry and game, namely, feathers, and in the instance of poultry which is not put into cold storage, feet, heads and entrails.

If the estimate of a practical poultryman is approximately correct, there are about eight thousand feathers on every fowl. For commercial purposes these feathers are divided into two classes—quills and feathers. The first, so far as the writer knows, are of no use as the trade is now managed, except to make artificial flowers or to be used as quills for millinery purposes, and since quills from larger birds than fowl and game are in greater demand, poultrymen are quite as apt to throw away wings and burn them on a dump-heap as to waste time trying to save them. On poultry-farms where only a thousand fowls are kept, this waste is considerable, while in larger establishments the loss would annually net an appreciable sum of money.

There may be several ways of utilizing wings or 'quills' (which include, of course, tail-feathers), but the most apparent one is the following easy method. Recalling the homely inventions of our grandmothers, everyone who can think back two generations must have seen or heard of the familiar 'wing' used about the store, hearth or house in general for dusting and brushing purposes. To this day a good wing, that is one which has been properly cured and handled, is quite, if not more, desirable than a cheap bristle brush, since the latter wears rapidly and unevenly, and is becoming more and more expensive along with brooms.

To make a wing usable and durable for household purposes, it should be dried a short time and then neatly bound at the cut end with a piece of cloth tightly sewed about it. A loop or small brass ring attached to the cloth handle, by which it may be hung up, completes the simple process unless one takes pains to disinfect the feathers. The wings of Turkeys and Geese are larger and more

like a regular brush, while the wings of fowl are softer and better adapted to dusting nooks and corners not easily reached by a cloth.

The tail-feathers of poultry and game are more difficult to utilize satisfactorily, being loose instead of firmly attached to a bony framework, but with a little patience they can be gathered firmly together, and then tied and bound into very useful dusters, almost round in shape. Reckoning the value of such a wing or duster at ten cents—and surely one is worth that sum if small cheap bristle brushes are worth thirty-five and forty-five cents—the saving in actual money by utilizing such a waste product would be great. Moreover, in many homes where rigid economy must constantly be practised, the saving effected in this way, small as it might be, would be worth while, especially since it would revive a custom common to every well-ordered household in days gone by.

The contour feathers of birds are commonly sold for about ten cents a pound, in New England at least, to middlemen who make a profit of two cents a pound in passing them on to manufacturers of cheap mattresses. It is said that such mattresses are particularly used by French-Canadians who make up so large a part of the manufacturing population of New England. When one considers how many contour feathers it takes to weigh a pound, it will be seen that such a feather-mattress calls for the plumage of many birds, but as this is a practical way of utilizing the plumage of dressed poultry and a far better one than any ornamental device known to millinery, it need not be discouraged.

Just how many 'quills' and 'feathers' of domestic fowl find their way to manufacturers of millinery goods the writer does not know, but it must be evident to every thoughtful person that the plumage of poultry is far better conserved in beds and brushes than in bizarre, inartistic ornaments for women's headgear. This season an unusual number of such ornaments, in addition to wings, are seen on hats. To a person of taste, such a display is actually painful. As a keen observer remarked: "If women *were compelled to wear* such crude, fantastic adornments as one commonly sees, they would probably feel injured and rebel." Why should the illusory, deceptive word, *style*, which connotes so little, hold women of common sense, acumen, and otherwise good morals in thrall! It makes no difference whether feather ornaments are real or imitations, the result is the same in kind, and any woman who persists in wearing wings and the present abominations (artistically considered) known as 'aigrettes,' which crisp and curl in any or all directions the maker may dictate, certainly commits a real offense against the canons of good taste, and, furthermore, persists in being a stumbling-block to less intelligent women and girls who follow the lead of the so-called well-dressed woman.

It is not pleasant to hear men sneeringly remark that women will never give up using feathers on hats, when women do so many things of much larger import and make sacrifices that men have never been known to make.

The time has come now to drop this childish fashion, to realize that any and all parts of a bird's plumage are useful for more practical needs than for

millinery purposes and to recognize the glaring trespass against good taste and public manners committed in wearing unnecessary, obtrusive, and distorted headgear. This practice, upheld in the name of Fashion, is on a par with the monstrosities of billboard advertising, now so generally condemned in communities where the landscape and public morals are esteemed. If any reasonable justification of adorning hats with the plumage of birds, whether real or imitation, could be given, the case might be different. The whole matter has become an issue of perverted taste, a relic of savagery handed down from uncivilized forbears who chose in childish love of bright colors and fantastic forms, to adorn themselves with feathers.

As to uses of the feet, head, and entrails of birds, the writer would welcome any information from persons who actually know what disposal is made of this so-called refuse. Aside from fatty and oily portions, and the possible use of parts of this matter in making 'meat-scraps' for poultry, the probability is that most of it is destroyed.

Let Audubon Societies investigate the whole subject thoroughly and discover the best means of conserving this waste, which if properly managed should yield the producer as well as the consumer of poultry and game better results.—A. H. W.

JUNIOR AUDUBON WORK

For Teachers and Pupils

Exercise XXXIV: Correlated with Music, Public Speaking, and Design

[Note.—In view of the constant increase in correspondence, the Editor of the School Department deems it wise to devote this midsummer number to articles contributed by its readers.—A. H. W.]

BIRD PAGEANT GIVEN AT JOHN B. ALLEN SCHOOL

Seattle, Washington

By L. LILLIAN MITCHELL

PROGRAM

PART ONE—PROLOGUE

(Orchestra Plays)

I. Father Time and Mother Nature.
II. Flowers appear.
III. Birds appear.
IV. Wren Drill.
V. Woodpecker Song.
VI. Crow.
VII. Hummingbird Dance.
VIII. Swallow Song.

PART TWO—BIRD-LIFE

I. Robins' Nest.
II. Cat catches one Robin.
III. Boy and girl catch a little Robin and put it in cage.
IV. Value of birds.
V. Pleasure derived from birds.

PART THREE—DEDICATION OF BIRD-BATH

Boys' Chorus Sings.
I. Bath presented.
II. Speech of thanks by Father Robin.
III. Bird Pledge by School.
IV. Birds flutter around Bath.
V. Orchestra.

Directions.—Reserve front of stage for visitors. To left of stage, shrubs and bushes; entrance for Father Time, Mother Nature and Flowers. To right of stage, seats for orchestra and school. Background filled with trees. Center back of stage, house and a few feet in front, slightly to right, bird-cage. Left center of stage, inside of shrubs and bushes, a tree with three shrubs running diagonally across toward right front of stage. A few feet in front of this tree is placed a bird's nest. A bird-bath stands on right front well toward the footlights.

EXPLANATION

PART ONE—INTRODUCTION

Father Time and Mother Nature slowly enter the place selected for the pageant. Father Time carries a large dial on which is printed the seasons. Mother Nature carries a wand of branches of different trees. They cross stage once, then Father Time turns the dial to point to Spring. Mother Nature looks at his sign, then slowly waves her wand. A little girl, dressed to represent a crocus, trips forward and dances. When she finishes she glides to the back of the stage and Mother Nature again waves her wand when girls, dressed to represent a violet, a daffodil, and a tulip, each come on separately and dance. As the last flower finishes, the other three join her and all dance to the back of the stage.

Mother Nature waves her wand again and all of the birds in their costumes flutter forward and flit, dip, and glide around. Soon they all fly into the woods at back of the stage. Again the wand is waved and two little Wrens from the primary room come on to stage and flit and dip while the rest of the room sing the "Wren Song." Then at the call of the wand three children representing Woodpeckers come forward and tap on trees while their room sings the "Woodpecker Song."

Next, one boy, dressed as a Crow, comes forth and clog-dances. He is followed by seven little Hummingbirds who flit and twist and turn on all parts of the stage as their room sings about the "Hummingbird."

Last come five little Swallows, who dip gracefully as their room sings the "Swallow Song."

Father Time and Mother Nature leave the stage as it is being made ready for Part Two, and all of the little birds hover around the woods at the back of the stage, where they can be seen but not heard.

PART TWO—BIRD-LIFE

A Robin's nest, large enough to hold three little children and a doll dressed to represent a Robin, should be put in place before the pageant begins and kept from view by a screen. A bird's nest containing another doll Robin is placed in a tree that is near by. A cage made of wire netting and large enough to hold one of the children, who represents a little Robin, is in the center back of the stage. It is screened off during Part One. (Four attendants remove the screens at the right time.) Three children, dressed in green, each holding a bush behind which to hide, sit down in different parts of the stage.

The screen is removed from the Robin's nest showing the three little children, the doll Robin in the nest and the father and mother Robin by the nest. The father and mother Robin fly away to get food. When either of them returns to the nest with imaginary food all the little Robins stretch up for it. (The mother Robin comes three times and the father Robin twice.) A cat is seen wandering back and forth; when both birds are away from the nest it sneaks over and seizes the doll Robin and carries it off into the bushes, after having worried it. The old Robins see the cat worrying it and fly frantically to the nest. The mother Robin quiets the little ones and the father Robin chases the cat.

As the father Robin and the cat disappear in the bushes, a little boy and girl run across the stage and point at the bird's nest in the tree. The boy climbs the tree and takes out the doll Robin and gives it to the little girl who fondles it and then runs and puts it into the cage. (As the little girl comes running, the attendant, who is behind the screen that hides the cage, takes the doll, removes the screen, and exposes the child Robin, which got into the cage while the boy was climbing the tree.) The frightened bird tries to get out and the boy pulls grass and throws into the cage, which frightens it more than ever. The girl goes in search of worms, wanders off into the woods, and gets lost. The cat sneaks over, puts his paw into the cage and tries to catch the bird. The boy drives the cat away and it disappears in the woods.

Five or six boys and girls rush over to the cage and question the boy, in pantomime. He shakes his head, and they hurry out into the woods to look for the little girl. (They put their hands up as if shouting, and run back and forth, until one designated searcher has crossed the stage three times. Then another searcher discovers the girl sleeping behind a bush. Motioning to the rest of the searchers, they embrace the girl and carry her home.) As they near the cage where the boy is still watching the bird, which is drooping now, the boy runs out to meet them and he and the girl hurry to the cage. The girl stands, gazing thoughtfully at the drooping bird for a moment. She slowly lifts the cage and takes out the bird. She nestles up to it for a moment and the bird flutters, straightens up and slowly flies away to its nest. The searchers then lead the little boy and girl away.

The father and mother bird now begin to coax the little Robins out of the nest. They give a call-note and fly back and forth. Finally the little ones move, half tumbling and half crawling out of the nest. Then the father and mother birds begin to pick bugs and insects off the shrubs, followed closely by the little Robins who occasionally fall down and who always open their mouths wide when offered something to eat. The old birds pick at the roots of the shrubs, too. The shrubs begin to grow. They rise slowly until they are standing up. Soon the Robins begin to fly farther away and finally coax the little ones, who are flying better by this time, out into the woods.

The screens are now arranged to represent a house, and a rocking-chair is placed in front of it. An old man (a boy with white hair and beard, wearing an overcoat and leaning on a cane as he limps along) comes out and sits on the chair. A Bluebird appears and flits back and forth while the rest of the children in the room sing the song "Bluebird." The man watches for the bird and smiles happily every time that it appears. The Bluebird then flies into the woods and the stage is cleared for Part Three.

PART THREE

[As the different sets of birds finish their part of the program they retire to the woods which are set at the back of the stage and fly quietly back and forth during the conclusion of Part Two.]

The principal, or whoever presents the bird-bath, unveils the bath, which has been standing in one corner covered by the flag. As he does so all of the birds from the woods flutter in and fly around the bath. The person who presents the bath makes a short,

appropriate, dedicatory speech to the birds and then father Robin steps forward and responds thus: "We thank you for your kindly interest in our behalf. May this bath be a blessing to many thirsty birds." [Turning to the school, which is seated on benches]: "And now pupils of the (John B. Allen) School, in view of the countless perils confronting us, and of our helplessness before them, we implore your help in creating a way of deliverance, through better knowledge of us and of our value, more thoughtfulness for us, and more sympathy with our weakness and our love of life." The school then gives the following bird pledge: "We promise to do all that we can for our native birds by treating them with kindness and by providing them with food, water, and homes."

The orchestra plays a selection, and a child comes forward with a flag. The whole audience stands, giving the flag salute and pledge, singing "The Star Spangled Banner" in conclusion.

[Those teachers who are interested to train their pupils to give a simple pageant, presenting few practical difficulties in staging, will be glad to know that the above was so favorably received, when given by the John B. Allen School at Seattle, Washington, that visitors in the audience urged its publication.

"In regard to further instructions concerning the costumes and the bird's nest, see pictures of children dressed as birds in 'Bird Children' by Elizabeth Gordon. The costumes used were all made of lining, except those of the Hummingbirds, who were costumed in cheese-cloth. Most of the costumes completely covered the arms, while a few had straps to run the fingers through. The tails were wired so as to make them stand out. Each child was measured and the costume made large enough to be worn over the clothing. The cat's costume was cut like a child's sleeping-suit and a stuffed tail was sewed on made of black lining.

"The bird's nest was made by placing a log across the front and setting a few stakes between which were woven twigs. The whole was covered with old grass. This was placed on a small elevation on the field chosen for the pageant. If there should be no elevation a small platform could be erected and covered with boughs."—A. H. W.]

FOR AND FROM ADULT AND YOUNG OBSERVERS

THE STORY OF 'BEAUTY'—OUR TAME ORIOLE

One morning late in June my little sister, while playing in the school-yard, saw a baby Oriole fall from a tree. She picked it up and placed it in some bushes where she hoped it might be safe. As soon as school was out she found it and brought it home, just a little fluffy ball of tan and light yellow, with two rows of white feathers like dandelion down along the sides of its head. One of its feet had been injured, for the toes were very much inflamed and one nail was missing.

Mother had read, 'First Aid to Birds' in the *Youth's Companion*, and she thought she would like to try helping the little one. We made a mush of egg-yolk and boiled potato, and, placing the bird in a berry basket lined with grass, we fed it from the end of a pointed orange-spoon. Drops of water were given in the same manner and an occasional bit of berry or worm. For the first few feedings it was necessary to force open the bill by a slight pressure at the

sides but soon merely the touch of the spoon was the signal for opening the mouth at once.

In a couple of days Beauty began to hop to the edge of the basket, then off the basket to the floor, and from the floor attempted to fly to the chair-rounds. At first our bird could only reach the very low ones, but each day it reached a higher one and soon could fly anywhere about the room. When first learning to do this, it would back off about a foot and then give a sort of leap. If it failed it would back off a little farther and would finally gain the round.

When very young it kept up an almost incessant calling, but as it developed this changed to an occasional low, soft call or a quick trill or chatter in answer to our call or whistle.

RUTH AND 'BEAUTY'

"For the first few feedings it was necessary to force open the bill by a slight pressure at the sides"

The tail and wings developed rapidly and by the end of two weeks Beauty was almost an exact reproduction of Mother Oriole. The feathers under the wings and along the sides of the breast seemed to become a deeper yellow each day.

We soon placed Beauty in a cage with a shallow dish of water and also one of food, and before long the little bird was beginning to drink and pick up things for itself though it still liked to be fed. One day we found it soaking wet. It had been down in the water-dish for a bath. Some of these warm days Beauty washes several times and has become so tame as not to seem afraid of anyone. Before being able to fly, Beauty would hop after mother's skirts, and as soon as strong enough to use the wings, would fly after us everywhere, lighting on our heads, shoulders, or hands, coming to the table at meal-time, and taking a helping of anything if allowed to alight on the dish, the remains of cereal, butter, cocoa, berries, etc.

After our bird had lived with us for about three weeks we hung its cage from an upper window near an elm tree. How it loved that elm tree! It spent most of the time in it, coming back to the cage quite often for food. If the window was open it would come in for a time and then fly out again. Once in a while it flew to trees farther off but always came back when we whistled or called.

Our pet found the water on a bird-shelf about fifty feet away and loved to bathe there, though still drinking in the cage. Beauty constantly surprised us

when we were out in the yard by lighting on us when we least expected it, or coming down in the flowers we were gathering, to look for little insects among them.

At night we coaxed this baby Oriole to the cage with sugar, which it would always come for, and then we closed the door for safety's sake. Early in the morning Beauty called to have the door opened and seemed so glad to get out to the tree and the bugs again!

Just now our bird is sitting on the table eating peanuts which little sister is crushing for it. Beauty loves to have a taste of everything—meat, potatoes, vegetables or ice-cream—and begs for a share of them all and is so very wise and cunning, with head on one side waiting for something more.

We cannot begin to describe how cunning our pet is, and we are all so fond of this little bird foundling! We wonder if it will fly south with the Orioles in the fall and if it will come back to us next year. We should know it by the crippled foot, and how we hope Beauty will come back to us again!—Ruth H. Scott (age 12 years), *Wake Robin Junior Audubon Society, Kingston, N. Y.*

"AT NIGHT WE COAXED THIS BABY ORIOLE TO THE CAGE WITH SUGAR"

[The teacher who forwarded this contribution writes: "Last spring, I formed a Junior Audubon Society with twelve little girls; other children heard of it and wanted to join. Before school closed we had over seventy members. In May many of them spent a Saturday at Slabsides with John Burroughs. I have known him for many years.

"We took walks once a week, after school, and to most of the children, it opened up a new world. They began to notice all the birds and then try to find out their habits and loved to tell about what they had noticed.

"I am enclosing a little story that I thought perhaps you could use in Bird-Lore. It might be a help to some other little folks to know how to make friends with the birds. It would be impossible to tell of the many cunning things 'Beauty' did. I was a personal friend of his.

"The little girl who is sending it has been especially interested in birds for two or three years, knowing most of our familiar birds by call as well as by sight.

"Last winter she had a Chickadee come and feed from her hand.

"The development, growth and friendliness of 'Beauty' was such a wonder to all the neighbors, we thought others might like to know about our pet. We enjoyed the story of 'Pete' in the May-June number. Just now the children are caring for a baby Robin until it is able to fly and care for itself. It was rescued from a cat."—A. H. W.]

A PARTRIDGE FAMILY

On the morning of June 7, in a pile of dead pine branches, I saw a single Partridge or Ruffed Grouse. This did not arouse much interest, but about four in the afternoon, while returning from a short ramble, I was surprised to see a flock of what I took to be seven or eight downy yellow-and-brown baby chickens of a very small size.

I did not hold my idea concerning baby chickens long, for very soon I saw an angry female Partridge who came at me with half-open wings, screaming, 'Hide! Hide!' very much like a cat.

Most people think that the parent Grouse pretends to have a broken wing and that the babies drop wherever they are, but this was not the case in my experience.

The mother, after the first attempt to frighten me, flattened every feather and went over the ground as if on wheels. Then she fluffed out all her feathers, spread her tail to almost a half circle, and erected her crest so as to seem twice her size, and then repeated her tactics.

The little ones ran as fast as they could—which is pretty fast—for ten to twenty feet, to a place of concealment where it was impossible to find them.

As soon as the chicks were hidden, the mother ran to some distance where she took wing noisily and departed.

I have not seen or heard anything of them since.—Philip J. Darlington, Jr. (age 12 years), *Winchester, N. H.*, R. F. D. 4.

[As readers of this article might be confused by the use of the names Partridge and Ruffed Grouse, it may be well to recall that in the North, the Ruffed Grouse is commonly known as Partridge, while farther South, the common name Partridge is applied to the Quail or Bob-white.—A. H. W.]

GULLS AT BANDON, OREGON

I am a member of the Sandpiper Bird Class at Bandon. This is a little town of about 2,000 people. It is picturesquely situated at the mouth of the Coquille River, on the south side. From any part of the town there is a beautiful view, but we built our small home as near the great Pacific Ocean as we thought it safe to live, so we enjoy the beach, which is considered by everyone who has had the pleasure of seeing it, as the most beautiful one on this coast. There are many enormously large rocks which Nature has carved in ages gone by. Among these are the Sphinx, or Great Stone Face, Duchess, Monk, Table and Cross rocks and the Cave of the Winds.

These rocks are the homes of Gulls, Murres and Puffins. The Gulls are very pretty birds, especially the grown ones, which are a bluish gray and white. The young are speckled brown and white in color. They have rather long legs, very large wings but a small body. The neck is long, with head similar to that of a Duck, but with a pointed beak bent at the point.

When seen on the beach or flying, they look large and heavy, but we have picked up injured ones on the beach and found them very light in weight. Sometimes they have a wing injured by a shot or a crippled leg where a crab's claw has had hold, or so it looks to us. They are graceful birds in flight or

GULLS AT BANDON, OREGON
"The beach, which is considered by everyone who has had the pleasure of seeing it as the most beautiful one on this coast"

when walking. Of all birds I think them the least timid, and am sure they could be easily tamed. For a long time one would come and sit in front of our house and we would feed it and talk to it. Each day it came closer, but after a time it came no more.

As everyone knows Gulls are scavengers and will follow ships on their voyages, watching for any scraps of food which may be thrown overboard. A great many people are annoyed because they come and steal food from their chickens. At noon each day they visit our school-house to look for bits of lunch which the children leave. For a time some of the boys tried to catch them. They soon learned the lesson and now stay perched out of reach until the lines form for the children to return to lessons, when down they fly for their lunch. People think it odd they do not bother us as we are so near the beach.

The only time we see them is when they are leaving the rocks soon after sunrise on their way to the wharfs or river beach, and again just at sunset when they are going to rest for the night, unless by chance a dead animal or fish has been thrown up on the beach, or the season for clam-digging is on. When the tide is low they feed on crabs which they catch by a leg, then fly to a rock where they drop their prey, thus breaking the shells so they can eat the meat.

The other day as I was walking by the river I saw a full-grown Gull flying around with a piece of meat, and two younger ones were flying after, screaming their loudest. I think the parent Gull was either teaching them to fly or to steal. They are such thieves! At almost any time one can see two of them having a tug of war over a fish. One will have the head, the other the tail, and they will pull and fight until one wins and flies away with the booty, or another Gull swoops down and grabs it, leaving the other two very angry.

As we walk along the river to town, which is about half a mile from our home, we have noticed Gulls by hundreds on the north side of the river near the lighthouse, watching for fish and crabs. As soon as one secures a prize it begins to scream.

In the fall of the year when the salmon start to run, the Gulls go farther up the river to the seining-grounds and to the cannery. Here they find plenty of food.

Although to some they are most annoying, they are very useful, as they keep the ocean and river beaches free from all refuse and decaying matter. They are protected by law, yet some boys and men delight to shoot at them.

Their nests are made in deep grooves in the rocks, lined with straw, grass and mud. There they are nearly safe from human hands. This is unlike the Murres which lay their eggs scattered about on the great rocks, so they may be easily picked up by anyone who can climb the rocks, which is not an easy task, yet many people do it.—Irene Barnekoff (age 14 years), *Bandon, Ore.*

[Perhaps some of our readers may have noticed a newspaper item last winter about Sea Gulls off the coast of Ireland, which "assisted airplanes in finding the positions of submarines for the motor patrol boats stationed along the route of incoming and outgoing ships." The article states that "these birds, which have keen vision, can sight a submarine below the surface of the water and fly down to see whether it is some new kind of fish. The motor boats then run up at full speed and start to shoot bombs in the sea to find the suspected submarine."—A. H. W.]

THE SUMMER TANAGER

Last year a Summer Tanager built a nest on an oak tree near the house out at the farm. Every evening I would watch the mother sit on a low branch and call her mate, and I would watch the mate come and they would go to bed.

I watched them teach their babies, but the babies were not very pretty. It took them two days to learn. This year they came and built again.—Robert S. Collings (age 10 years), *Hot Springs, Ark.*

[The youngest member of the Boys' Audubon Club, which is the Bird Protectors' Club of Hot Springs, sends the above. As a bit of unaided observation on the part of a boy only ten years old, it conveys first impressions of bird-life vividly. Such first impressions are the ones which stay by one the longest and lay the foundation for more extensive knowledge in later years.—A. H. W.]

A BIRD RECORD OF NOTE

Harold Fredrickson, an eleven-year-old lad, has a list of birds identified during the year 1916 which any boy should be proud of. The list includes ninety-eight species, all of which have been seen during the year 1916, in and about Charles City, Iowa.

The first actual record for a Cardinal seen at Charles City, for several years, is on this boy's list.

He serves as Vice-President of the Toksali Nature Club, a Junior Chapter of the Califor Naturalist Club, and also acts as curator of the Club. All specimens of nests, and other nature material, found while the Club is tramping are given into his care. During the winter months, the Juniors study the animals, birds, etc., from specimens at hand. They never kill, however, for a specimen, except in the order of insects.

The Califor Naturalist Club has for several years published the list of birds seen by Club members during the year. Making use of these lists, and several others of individual observers, the Corresponding Secretary, Carroll Lane Fenton, recently compiled a list of the 'Birds of Floyd County.' This list was published in the 'Wilson Bulletin.' The President of the Naturalist Club is now working on a list of the 'Mammals of Floyd County,' and as soon as possible, lists of the insects, mollusks and reptiles will appear. Mrs. F. May Tuttle, an honorary member of this Club, is now compiling a list of the 'Flora of Mitchell County.' When this list is completed, it is to be published by this Society, and with the other lists, it will form quite an accurate and complete list of the the wild life of this part of Iowa.—Howard C. Brown, *Charles City, Iowa.*

[Practical work of this kind is most desirable, since local observers covering limited areas can obtain reliable data which is necessary to fill in gaps in observations covering larger areas. Bird clubs should everywhere be encouraged to keep accurate systematic records for uses of comparison.—A. H. W.]

THE BLUEBIRDS

A male Bluebird sitting in a tree,
Sings a sweet song to you and to me;
His tender mate is on the nest,
Sheltering some little eggs beneath her breast.

—Marjorie Carlson (Age 8) *Garfield School, Minneapolis, Minn.*

THE PHŒBE

By T. GILBERT PEARSON

The National Association of Audubon Societies

EDUCATIONAL LEAFLET NO. 93

There is a little camp in the woods on the New York side of Lake Champlain where three children and their parents go every summer. It is a good place to see birds. In fact, the children are awakened every morning by birds singing in the trees all around them. There are Redstarts and Chestnut-sided Warblers about every day. Near by the Oven Bird calls "teacher, teacher, teacher," until one begins to wonder what has become of that dear instructor. Sometimes the old Grouse follows her young through the thicket and under the veranda. In the evening it is pleasant to sit on the porch and listen to the Veeries. Sometimes a dozen sing until the night shuts in upon them.

Of all the birds, however, that visit "Bird Nest Cottage" the Phœbe is the most trustful. She and her mate may be seen at almost any time, either on the veranda-railing or on some bare limb of a tree near by.

When the family arrives on the fifteenth of June, the children, after one look in the camp, all rush out to find the Phœbe's nest, and for several years they have never been disappointed.

Three seasons this bird built under the veranda, placing the nest on cross-timbers. Last summer the nest was made on the top of a window-facing just under the low-hanging eaves. This place would be a very insecure foundation for a nest as large as that built by the Phœbe, as the projection is less than an inch from the side of the wall, if the nest were made of sticks and straw, but the Phœbe builds her cradle chiefly of mud, so she can plaster it to the wall almost anywhere that there is just a little support. Moss is usually employed in addition to the mud.

Four white eggs are laid. These are rarely adorned with a few brown spots. The children, however, have never been able to discover whether this particular Phœbe lays pure white eggs or whether they are spotted. The reason for this is that the eggs are always hatched by the middle of June.

All day long the plaintive *pewit phœbe* of the parent birds may be heard, and every few minutes one of them brings food to the nest.

One night we took an electric torch and climbed down the rocks under the veranda to see what the Phœbe family was doing. There, sprawled all over the top of the nest, were four well-grown youngsters—the parents were nowhere in sight. Had the little ones been hatched only a few days we should probably have found the mother at home, but now there was no need for her presence to keep the babies warm, for they were not only nearly as large as their mother, but well covered with feathers. The night was warm, so it was more com-

THE PHOEBE

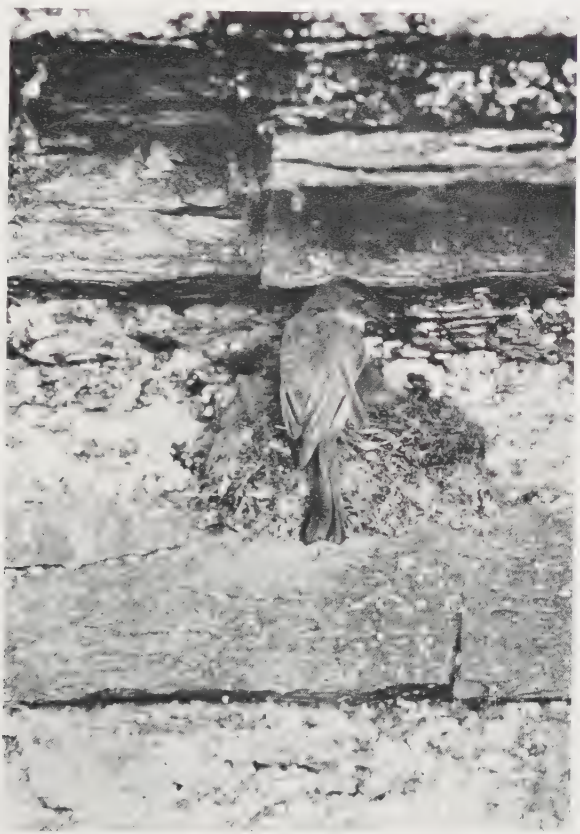
Order—PASSERES
Genus—SAYORNIS

Family—TYRANNIDÆ
Species—PHŒBE

National Association of Audubon Societies

fortable for everybody to leave the young ones by themselves, while the mother roosted in a tree near by. I suppose it was a great relief to her to be able to get an unbroken night's rest once in a while after a hard day's work feeding them.

There are other camps in the neighborhood, and probably every third one has its pair of Phœbes. Some of the people do not like to have the birds around,



A PHŒBE AT ITS NEST IN THE FACE OF A CLIFF

so I have heard that they tear the nests down, but at "Bird Nest Cottage" Phœbes are always welcome.

Phœbes build their nests in a great variety of places, but the most of those I recall having seen were situated on some structure made by the hands of man. Thus they build on the joists of barns or other outbuildings; on the cross-pieces of verandas; under the eaves; on the cross-pieces of culverts or bridges; or on the sides of rock walls. Once I knew a Phœbe that made her nest on the side of a disused open well. The spot selected was about six feet below the level of the ground and was protected by a broken piece of

rotting curbing. Stone piers of country bridges are favorite places and the bird is widely known as "Bridge Pewee."

Mr. John Burroughs thinks the Phœbe does not show any very great amount of intelligence when it comes to adjusting its mind to new conditions. In Bird-Lore, some years ago, he recounted an incident of a Phœbe that suddenly found herself deprived of the one spot on the ledge of a rock where she had been building her nest for years, and which may have constituted the only place where she had ever had a nest. At this juncture he states:

"A new stone house had been built upon the rocks above me, with a piazza all around it, covered by a continuation of the main roof down the required distance. After much inspecting of this piazza the birds concluded to build a nest upon the plate beside one of the rafters. Now this plate was about thirty feet long and there were ten rafters notched upon it, and hence ten plates exactly alike. The bird selected the fourth rafter from the end nearest the woods, and began her nest upon the plate beside it. She was in a great hurry and worked 'on the jump,' so to speak. She got her mortar in the ditch near my cabin. One morning I watched her for some time. She made a trip every minute, carrying her load up a steep grade about one hundred yards. The male looked on and cheered her, but did not help. He perched upon a dead sunflower-stalk near the ditch, flirted his tail, and said, or seemed to say, 'Go it, Phœbe, you are doing well; you are the wife for me.' Every trip the mother bird made he would accompany her a short distance and then return to his perch.

"As the nest-building seemed unusually prolonged, I went up one morning to the new house to see how matters were progressing. Instead of one nest I found five in process of construction. Some had only the foundation laid, others were an inch or two high, and one was three-fourths finished. I sat down to see what it all meant. Presently the eager builder came with her beak loaded and dropped down upon one of the nest-foundations. She seemed to hesitate a moment, as if she had a suspicion that something was wrong, and then put down her material and flew quickly away. The next time she struck the nearly finished nest and put down her load without hesitating. I watched her for half an hour and soon saw how it was with her—why she scattered so. I concluded she was misled by the sameness of the rafters they were all alike, and whichever one she chanced to hit in her hurry, there she deposited her mortar. She had been used to a ledge where there was but one building-site; here there were half a dozen or more, with no perceptible difference between them. So I hit upon a plan to concentrate her—I put blocks of wood or stones in all the nests but one and watched the result. When now she came upon these strange obstacles she would hover about for a moment until she discovered the largest and unincumbered nest, when she would alight upon it and leave her load. She then soon took the hint, finished the one nest, laid her eggs, and went forward with the incubation."

John James Audubon, the great naturalist, tells us in one of his books of the movements of a pair of these birds about their nest. He hid in a cave near the nest while the birds went about their daily affairs. He says:

"There was a remarkable and curious twittering in their note while both sat on the edge of the nest at those meetings, and which is never heard on any other occasion. It was the soft, tender expression, I thought, of the pleasure they both appeared to anticipate of the future. Their mutual caresses, simple as they might have seemed to another, and the delicate manner used by the male to please his mate, riveted my eyes on these birds, and excited sensations which I can never forget.

"The female one day spent the greater part of the time in her nest; she frequently changed her position; her mate exhibited much uneasiness, he would alight by her sometimes, sit by her side for a moment and suddenly flying out would return with an insect, which she took from his bill with apparent gratification. About three o'clock in the afternoon, I saw the uneasiness of the female increase; the male showed an unusual appearance of despondency, when, of a sudden, the female rose on her feet, looked sidewise under her, and flying out, followed by her attentive consort, left the cave, rose high in the air, performing evolutions more curious to me than any I had seen before. They flew about over the water, the female leading her mate, as it were, through her own meanderings. Leaving the Pewees to their avocations, I peeped into their nest, and saw there their first egg, so white and so transparent that to me the sight was more pleasant than if I had met with a diamond of the same size."

Very often the Phœbe rears two broods of young in a year. In such cases the first nest is rarely used a second time. Their nests are often infested with insects that must render the lives of the young very uncomfortable, in fact they are sometimes killed by the attacks of these parasites.

Few birds are greater insect-eaters. One need only watch a Phœbe a few minutes to become convinced of this fact. True Flycatcher that he is, the bird lies in wait for his prey. His watch-tower is some dead limb or stake. Here he sits, frequently jerking his tail nervously and calling in his petulant, impatient way until some insect comes flying along. Then out he darts, seizes his prey in his beak, and returns to his perch.

Phœbes eat many beetles, weevils, grasshoppers, and wasps, as well as flies that bite and sting cattle. A few seeds are taken and the bird eats also an occasional cherry, elderberry, or other wild fruit. It is among the first birds to arrive in spring, and is the only Flycatcher in the United States that spends the winter north of the frost-line. It may be seen in Florida, Louisiana, and other southern states in the winter.

The Audubon Societies

EXECUTIVE DEPARTMENT

Edited by T. GILBERT PEARSON, Secretary

Address all correspondence, and send all remittances for dues and contributions, to the National Association of Audubon Societies, 1974 Broadway, New York City.

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Any person, club, school or company in sympathy with the objects of this Association may become a member of it, and all are welcome.

Classes of Membership in the National Association of Audubon Societies for the Protection of Wild Birds and Animals:

$5 annually pays for a Sustaining Membership
$100 paid at one time constitutes a Life Membership
$1,000 constitutes a person a Patron
$5,000 constitutes a person a Founder
$25,000 constitutes a person a Benefactor

FORM OF BEQUEST:—I do hereby give and bequeath to the National Association of Audubon Societies for the Protection of Wild Birds and Animals (Incorporated), of the City of New York.

A NEW THREAT TO BIRD-LIFE

The war situation has resulted in an increased menace to bird-life in the United States. There is growing evidence that owing to the high cost of meat and other food-staples, Italians and Hungarians in the North and negroes in the South have turned an unusual amount of attention to the killing of song-birds, and as the war goes on this slaughter will tremendously increase unless checked.

This matter has promptly been taken up by the Association, and by the quick assistance of the members a campaign has been launched to meet this new drive against our birds. At the present time the Association is active through the press in calling the attention of the public to the necessity of each individual exerting his or her influence to see that birds are protected. It is absolutely impossible for the limited game-warden force of the country to watch every irresponsible person who goes out with a gun, but if the people of the country who are interested in birds will investigate every gunshot they hear, will warn their employees not to kill birds, and to watch for others with a view to reporting violations to their game-warden or to this office, great good can be accomplished.

The Association also has prepared cloth 'warning notices' which will be sent free to anyone willing to post them on their property, by the roadside, in country stores, or elsewhere. These posters call attention to the law on the subject, and ask people to report violations. They are printed in English and Italian. Across the top runs the legend, "Shooting on this Property is Prohibited." Thus the posters will serve property-owners as trespass signs, and when placed elsewhere they may be turned in half an inch at the top so that this line is not displayed. Write at once for a supply of these.

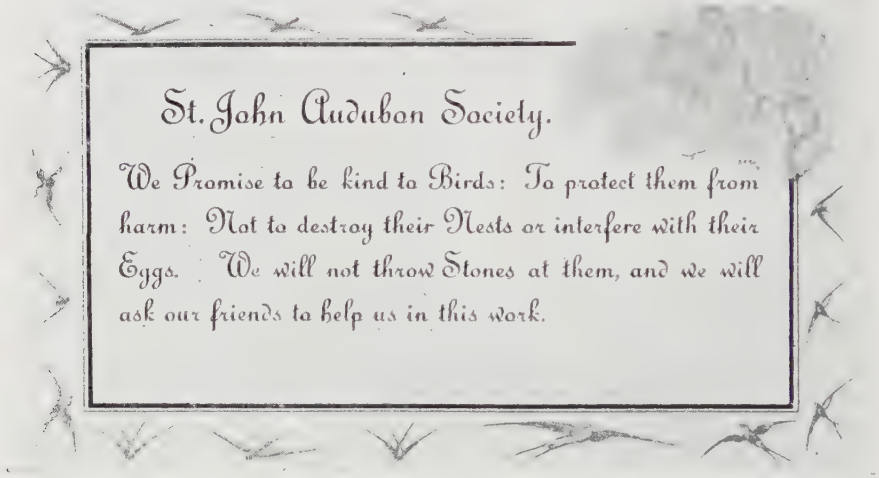
As Secretary of the Association I wish to urge all our members and other readers of BIRD-LORE to exercise unusual vigilance, for such service will greatly be needed during the coming summer and autumn. If you find anyone illegally killing birds, try, if possible, to get the person's name and address. Collect every available fact on the subject, and if you do not know the local game-warden, write or wire the facts to the office of the National Association and we will take the matter up through the state authorities. The Association stands ready to go to the expense of employing a lawyer, if neces-

ST. FRANCIS AND THE BIRDS
From a drawing by A. G. Learned

sary, or take other steps necessary to bring such offenders to justice.

This is the time when all Audubon Society members should be particularly alert. The enormously enlarged acreage being put under cultivation in this country means that the greater crops of succulent plants, grains, and vegetables will furnish additional food for insect-pests. A large per cent of the eggs laid by insects never reach maturity. One reason for this is the lack of food. With increased food there will be an increased number of insects. This means we need a greater number of birds. We must wage a campaign of the utmost vigilance. Birds should be fed during the time of the year when their natural food is scarce. More nesting-boxes should be placed for them, and drinking-fountains should be provided in dry regions; and, above all, look out for the man or boy with a gun!

The food now destroyed in America by insect and rodent pests would feed the people of Belgium! Can we spare a single insect-eating bird?



PLEDGE CARD USED BY THE MEMBERS OF THE ST. JOHN, NEW BRUNSWICK, JUNIOR AUDUBON SOCIETY. IT IS ATTRACTIVELY PRINTED IN THREE COLORS

OUR ARMY OF RECUITS FOR BIRD-PROTECTION

Think of educating 261,654 children to the beauty and value of bird-life in a single school year! This is the record of the National Association for its Junior membership system the past year. Think of the effect that this should have on the next generation, when these boys and girls have taken their places in the Nation's work! There were 11,935 of these Junior Audubon Bird Clubs formed between June 1, 1916, and June 1, 1917.

It would seem that the record made last year was the absolute limit with the funds that were at our disposal for the purpose, but this year's record exceeds last year's figures by 1,034 classes and 56,516 members. These results were achieved at a cost of $25,000 (in addition to the children's fees) subscribed for this purpose. Five thousand dollars came from Mrs. Sage and $20,000 from an unnamed benefactor who has magnificently supported this work in the past.

These clubs were formed in every state of the Union, and more than 8,000 children were enrolled in Canada. The following list shows the distribution of these Junior Classes and their membership; it also

shows the number of children enrolled in each of these states the year preceding. This comparative arrangement therefore shows the increase in the various states.

Statistics of Junior Classes

Southern States (Sage Fund)

States	Classes	Members	
	1917	1917	1916
Alabama	32	530	384
Arkansas	28	643	203
District of Columbia	3	77	247
Florida	216	4,049	2,777
Georgia	131	2,578	2,293
Kentucky	114	2,391	1,284
Louisiana	30	542	340
Maryland	150	3,360	3,425
Mississippi	38	991	360
North Carolina	134	2,925	2,443
South Carolina	61	1,600	989
Tennessee	101	2,541	1,063
Texas	150	3,060	2,123
Virginia	120	2,356	1,517
West Virginia	196	4,130	3,455
Totals	1,504	32,673	22,942

Northern States

(Children's Educational Fund)

States	Classes	Members	
	1917	1917	1916
Arizona	8	176	63
California	348	8,431	2,119
Colorado	70	1,771	2,221
Connecticut	611	12,546	9,137
Delaware	7	109	141
Idaho	34	364	619
Illinois	433	11,722	7,961
Indiana	359	6,490	5,677
Iowa	279	5,832	4,154
Kansas	114	2,447	3,081
Maine	79	1,585	1,162
Massachusetts	519	10,802	6,536
Michigan	542	10,855	14,334
Minnesota	427	9,441	8,094
Missouri	115	2,999	3,103
Montana	41	1,063	2,011
Nebraska	127	2,080	2,793
Nevada	22	478	180
New Hampshire	317	6,165	4,591
New Jersey	570	14,382	8,226
New Mexico	10	165	79
New York	1,841	41,514	35,536
North Dakota	90	1,888	477
Ohio	1,121	22,249	20,057
Oklahoma	55	1,149	711
Oregon	100	4,100	4,243
Pennsylvania	732	17,464	8,304
Rhode Island	41	1,215	1,280
South Dakota	43	785	1,131
Utah	33	738	1,521
Vermont	48	873	1,240
Washington	604	14,696	5,987
Wisconsin	138	3,070	4,188
Wyoming	11	193	290
Canada	149	8,048	10,350
Totals	10,431	228,981	182,196
Grand Totals	11,935	261,654	205,138

Many charming letters, often with excellent photographs, come to us from this army of enthusiastic young bird-watchers, and a whole magazine might be filled with them, could the requisite space and expense be spared. All it is possible to do now is to offer some sample pictures with descriptive legends.

BIRD PAGEANT GIVEN BY THE LITTLE FOLKS OF THE JOHN B. ALLEN SCHOOL, OF SEATTLE, ON THE OCCASION OF THE PRESENTATION OF A BIRD-BATH

(See page 218)

JUNIOR AUDUBON CLUB OF PUBLIC SCHOOL NO. 3, RENSSELAER, NEW YORK

PRIZE-WINNERS IN THE BIRD-HOUSE CONTEST OF EVERETT, WASHINGTON

LIBRARIES AND BIRD-PROTECTION

The public libraries in the United States and Canada number perhaps 6,000, not counting those of schools and colleges. New York State alone has 576 according to last accounts, and no considerable town or village in New England lacks something of the sort. All these ought to be, and most of them are in varying degree, not only reservoirs of information but fountains of improving influence. Whether this latter usefulness is exerted depends largely on the initiative and energy of the librarian, but in many cases where this is not apparent it may be roused, willingly enough, by tactful suggestions from without.

One of the directions in which a library may serve its community well is in stimulating and promoting an interest in birds and bird-protection among the younger readers of its books. A long list of libraries might be made that have done this to great advantage, and some of them have been conspicuous in this service. In Columbus, Ohio, for example, in Brookline, Mass., and elsewhere, the library has furnished not only a reading-room for flourishing Audubon Societies or bird clubs, but space for extensive exhibitions that have awakened the whole town to the value of the subject.

Many librarians have been themselves the organizers of bird clubs, Junior Audubon Classes, and similar movements, and have freely opened their facilities for study. One such, in California, has placed dozens of nesting-boxes, food-tables, baths and other bird-attracting apparatus on the library grounds, and has gathered about her a club of more than 150 school-teachers and pupils.

When such personal leadership is not taken, much may yet be done by a librarian to help in this matter. The need of books of reference for bird-students should be recognized and such books supplied. Some of them are too costly to be bought by the ordinary child, yet should be accessible to him. It is the function of the library to provide them. Such periodicals as BIRD-LORE, *The Condor*, and

Blue-Bird might be subscribed for. The publications relating to birds by the United States Department of Agriculture, the state governments and experiment stations, which usually are very instructive, ought to be displayed and attention called to their value. Notices should be placed on a bulletin board of new books, and of good articles in current magazines, in the field of nature-literature; and pictures should be shown wherever practicable. The colored plates issued in its Educational Leaflets by this Association should be displayed on bulletin boards in all libraries, with information as to where copies may be obtained.

In these and other ways, libraries may, and should, give aid to the cause of bird-protection and bird-study, and thus render a service to their communities for which they are peculiarly well fitted.

Audubon Prosecutions

One of the great roosting-places of Robins which resort in winter to the more comfortable region south of the Ohio River and gather in enormous numbers at certain favorable places, was, last winter, in the mountains near Rugby, Tenn. Millions roosted in the evergreen trees on the hillsides and at evening gathered in the branches in such clusters that dozens might be killed by a single charge of shot. "It has been the custom," says a local newspaper, "of the people in the neighborhood to kill the Robins by the thousands. In fact, this winter two carloads of the birds have been shipped to the markets from Rugby. It was known to everybody about the place that the Robins were being killed, and nobody seemed to care anything about it one way or the other. Certainly the plain folks of Rugby did not know it was against the law to kill the birds."

This is the same sort of information that used to fill western papers when the vast flocks of Passenger Pigeons suffered slaughter year after year until presently all were gone. The men and boys of that time took no heed of law or thrift; and the "good people" of Rugby were equally ignorant and thoughtless. But before the shooting had gone far, "an agent of the Audubon Society," we are told, went to the town, told the people the killing of Robins was against the law, and to prove

PHOTOGRAPH OF 527 SKINS OF BIRDS OF PARADISE

Seized by Government Agents at Laredo, Texas, January 29, 1916. They were being smuggled into the United States. These were divided among educational institutions by the Government, a number being sent to the National Association of Audubon Societies.

it had a dozen or so arrested, and found a judge who fined them all. "They said they did not know it was against the law," the report proceeds, "but now that they are acquainted with the fact, they will cease shooting the birds. No further trouble is expected from the region, and the lives of tens of thousands of Robins have been saved."

All this is gratifying, and it shows what may be done by a wise and energetic man, with the Audubon spirit in his heart and knowledge in his head to correct the bad traditions of a community whose chief faults are owing to lack of education. We greatly need more energetic local Audubon workers like this splendid man, to fight for the wild birds.

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WITH OUR AFFILIATED SOCIETIES

The issue of a *Bulletin* has also been begun by the New Hampshire Audubon Society, under the active leadership of the Rev. Manley B. Townsend, at Nashua. This will be published irregularly, and, to judge by the initial number, will be a series of instructive leaflets rather than a news-sheet. The first issue gives admirable advice on feeding birds in winter, peculiarly adapted to circumstances in that snowy state. It is neatly printed and prettily illustrated.

The societies affiliated with this Association are well aware of the value of printer's ink, and excellent periodicals and leaflets come to us from various quarters of the field. It is a good sign, showing that an organization seeking publicity in this way is doing something worth telling about. That some of the older and stronger Audubon groups should not have done more publishing than they have is rather surprising. Why, for instance, did the Massachusetts State Society wait until now to offer their *Bulletin?* This publication began in February, 1917, and is issued monthly. It is not only a chronicle of the affairs of the Society and a source of information as to protective legislation, educational work, lectures, exhibitions, new books, etc., but carries noteworthy items of ornithological news and pleasant stories of bird-life. Such a bulletin is not only inspiring and valuable to a society as a 'house-organ,' but, as edited by Secretary Packard, may greatly extend the reputation and utility of theMassachusetts Society in all New England. Among other things, the last number reports the remarkable success last winter of the customary course of bird-lectures given in Boston.

In Rhode Island the State Society is represented by the series of *Bulletins* of the Park Museum in Providence, which is in charge of the State Society's Secretary, H. L. Madison. This publication is especially useful to teachers in their nature-study classes.

The Hartford Bird Study Club is the largest and most conspicuous organization of the kind in Connecticut, although the State Society has carried on a far more general educational work in the schools and by means of traveling libraries. No serial publication is supported by either, but the Hartford Club issues annually a *Year-book* that is a model of its kind. Year-books are also issued by several other large bird clubs, especially those of Brookline, and Milton (Brush Hills Club),

Mass.; Greenwich, Conn.; Meriden, N. H.; Bedford Hills and Rhinebeck, N. Y.; Morristown, Pa.; Somerset Hills, N. J.; and Buffalo, N. Y.

The interests of bird-protection in Ohio, and especially those of the strong Bird-Lovers' Association in Cleveland, are fostered by the pretty little magazine *Blue-Bird*, which was founded by the Ohio agent of the National Association, Dr. Eugene Swope, but is now edited and published by Mrs. E. C. T. Miller, President of the 'Bird Lovers,' at Cleveland. Indiana, Michigan, and the other northwestern states are doing good work through their State Societies, but thus far have not attempted much in the way of publications. It seems a pity *The Wayside* was permitted to expire.

The Audubon Society of Buffalo, now in its ninth year, has long been active in spreading its influence through a regular series of newspaper articles, by the publication of an annual *Bird Almanac*, circulars, yearly reports, and various leaflets. The untiring agent in this useful activity has been Mrs. G. M. Turner, who has held the office of secretary for eight years, but now is retiring because of a change in her residence from Buffalo to Riverside, Cal. Few ladies in the field of Audubon work have been so wise and faithful and have accomplished so much good as has Mrs. Turner in western New York, and a host of good wishes go with her to the Pacific Coast. At the meeting of the Buffalo Society on June 19 she was presented with a certificate of Life Membership in the National Association, the Society paying the $100 fee in recognition of her splendid services.

Illinois, however, is still 'going strong,' not only by constantly sending out several kinds of circulars, migration-records, posters, etc., for local use by teachers and amateurs, and by furnishing to schools traveling libraries and collections of lantern-slides relating to birds, but by the issue twice a year of its *Bulletin*, which is really an illustrated magazine of general interest and value to bird-students.

'The Woodpeckers' Convention,' a playlet by Mrs. F. T. Bicknell, is delighting thousands of children in California.

THE BIRDS' CHRISTMAS TREE
Note small packages of food suspended from limbs. Woodruff Junior Audubon Class, West Helena, Ark.

1. PURPLE MARTIN, Adult male
2. PURPLE MARTIN, Female
3. GRAY-BREASTED MARTIN
4. BARN SWALLOW, Adult
5. BARN SWALLOW, Young

(About one-half natural size)